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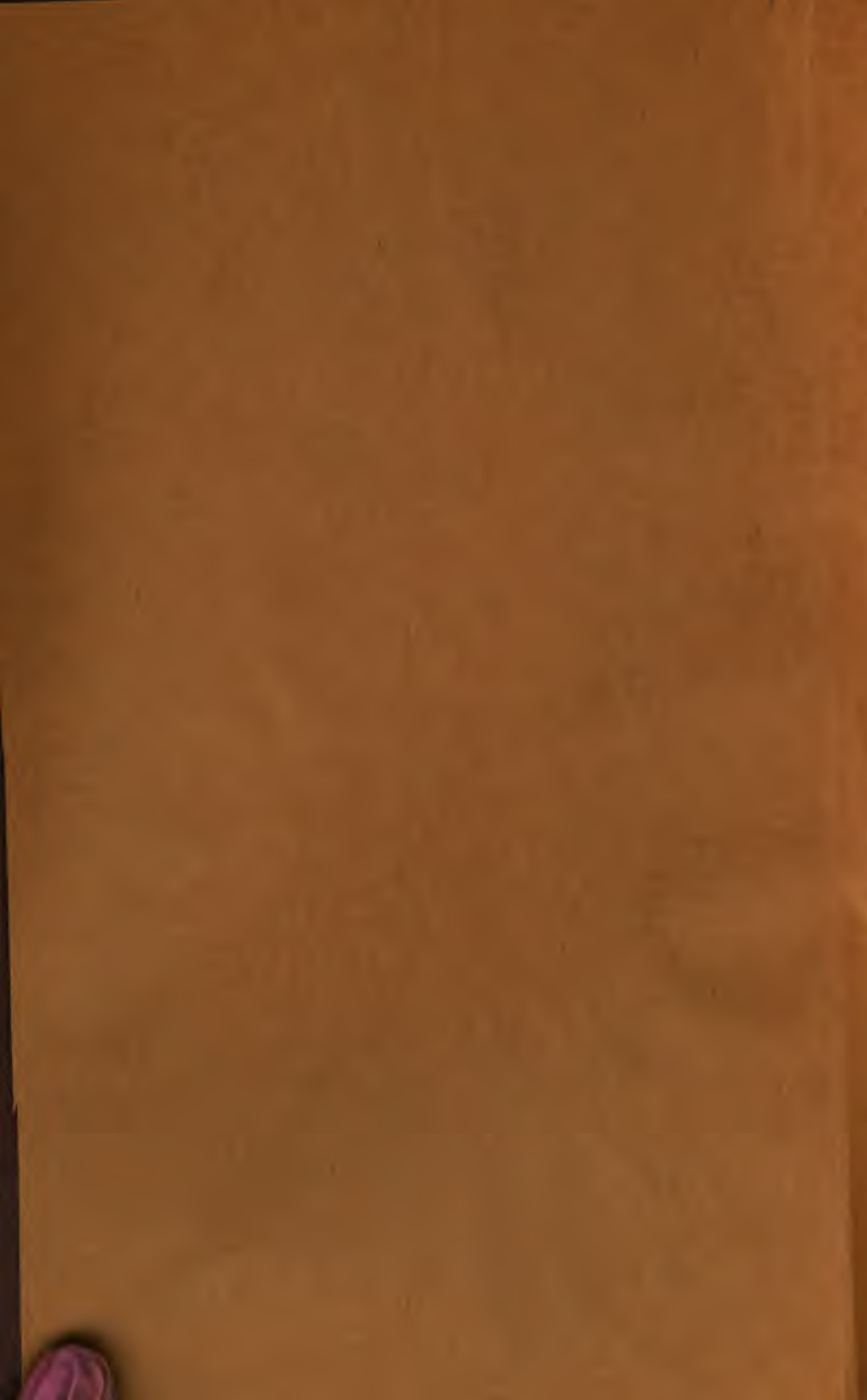
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## PART I.

Kindergarten Games, and those directed  
by the Mother and Family.

Their Meaning and Use Practically Explained.

BY

Emma Marwedel.

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1888.

# GAMES OF OCCUPATION.



1. FAMILY BALL-PLAY.
2. FORM AND COLOUR GAME: "BABY'S DELIGHT."
3. COLOURED RING GAME: "RINGOLETTES."
4. THE CHILD'S FAIRYLAND OF LEAVES AND FLOWERS.

GIFT

## PREFACE.

IN his eighty-third year Pestalozzi still repeats, in his never-to-be-forgotten Address to mothers, that activity, even in a little child, is the only truly sound means, nay, the only available one, for it to become conscious of the extent of all its powers in a common power, that "of human nature vigorous in will, by developing sense, intellect, and physical strength to true joyousness of life."

To recognise and develop this power, dormant in each newborn child, as it appears in playful activity in the child, and to further it according to fixed principles, Pestalozzi and Froebel determined to work out methods, which had their centre in the intellectual and bodily needs of the child. These being intended for the mother, give her a high educational consequence as the one who is responsible for shaping the character of the human race.

The manner in which woman is to be practically prepared for her high and, consequently, difficult calling as mother, wife, and educator, is therefore a burning question in social economy. Family life is the germ of all the human virtues. Example and habit have even to fertilise the first year of life. It is impossible, say Froebel and Preyer, to eradicate in the second year what has been done amiss in the first year. Thus, the loving instinct of a mother's affection is summoned before the forum of politico-economical consideration. The fiat goes forth, that the increasing duties of the mother require more than "blind instinct." She demands gravely and frankly: whilst the preparation of our food depends on chemical laws, and the cut of our clothing on physiological conditions; whilst ventilation, recreation, agriculture, the production and cultivation of plants and animal life is to be promoted by scientific principles; shall then the development of the human being be the only thing of less value, and be left to chance guided by instinct?

Praiseworthy efforts have indeed been made. Eminent men and women have exerted themselves by means of periodicals, proposals, and practical meetings, to do their utmost to dispel the prevailing indifference to the early development of the child.\*

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\* Vide Baroness von Mahrenholz-Bülów's appeal in connection with her periodical: "Die Erziehung der Gegenwart."



Prof. W. Preyer points out the slow and gradual development of the child's senses which leads to the formation of ideas, and with it the line of division between the natural instinct of an animal and the development of the human mind. None will be able to resist a deep impression when, by means of notes taken with scientific exactness, the mode is proved in which it becomes possible for the child to work upwards, from the first and weakest sense-impressions which it received from the liquidity and sweetness of the milk, step by step, by making experiences through perceiving differences, and by connecting these experiences; so that after the lapse of two years, during part of which time it neither understands speech, nor is able to make use of it, there is developed a being with often very determined will, and with insight into the conscious use of its limbs.

This is all the more striking, as we must assume that the sensations being manifested, and the only partial understanding of speech, must be preceded by an endless series of conclusions which the child has made by itself. From these undeniable facts, it appears quite impossible to approach this self-development otherwise than with the greatest and most careful attention, for which, above all, is required that the mother should direct it as much as possible.

Like the oak which, slumbering in its full form in the unpretending acorn, requires the animating circumstances around it in order to expand in its full greatness and beauty, the spiritual power of man lies hidden slumbering in each new-born child. He brings with him into life, natural gifts! Whether these are to be awakened to light, to an unfettered and joyful existence, or to have but a starved life, depends on controlling collateral circumstances. One thing only is irrevocably clear to us, namely, that if developing influences at all take place, these rest too much upon an erroneously sought shaping instead of an unfolding; and under this suffer the free development of the senses and their principal object, viz., to enable the inner spiritual eye to comprehend by means of form, in its spiritual contents, that which is outwardly visible.

The ethical and æsthetical perception of life, in the connection with the earliest development of the senses, has still been too little considered. What may be attained with it is shown by the convincing, happy results on those of weak intellect and idiots, in whom ethical-æsthetical sense-influences have been crowned with unexpected results.\* The culture and exercise of the senses, such as Froebel illustrates them, in this spirit, in

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\* Dr. Ed. Séguin points out that science chiefly owes these results to the women-officials in the Institutions for the benefit of such individuals.

his extremely valuable Mothers' Nursery and Cooing Songs repeatedly referred to in educational works in America and England, seem apparently little attended to by mothers. The Kindergarten, like a gardener's nursery, not being connected with the school, there remains for the latter the responsibility which it believes to have solved by the so-called "object-lessons."

But as the school chiefly wishes to "teach," that is, develop the intellect, it proves itself insufficient.

Firstly, the senses as such are not being developed ; secondly, as the sense-perceptions do not go hand in hand with the necessary development of the sympathies, we find as a consequence the increasing sharpness and coldness of intellect.

Over-education is often complained of as doing harm; but this fear is entirely to be restricted to the intellectual faculties. No one has yet feared to over-educate the heart, the true home of all the warmer and tender feelings, the source of sacrificing affection.

There is an earnest striving to bring the child in connection with nature : school games, holiday colonies, plantings of trees and rambles, all the results of this such noble endeavour. The famous school gardens, under their enthusiastic originator, Dr. Erasmus Schwab, extend their ethical-æsthetical mission from year to year. They are destined to form a genuine temple for higher views of nature. In them the fertilization of the heart, mind, and character is accomplished without preaching. The poetry of plant life, its coming and going, its silent resignation, its completely merging itself in nature's great work ; the sweet legends, the poetical change of action between the blossoms and their playmates, the beetles and butterflies, the charm of the colours, the forms and the pleasant odours—all these are stored up lovingly in the child's mind. Yet, in order to attain this, methodical preparatory instruction is required. The child must know the A B C of the language of nature before it can read with intelligence in nature's open book ; the right time for this is too often missed. When the child is most tender and susceptible is the time when ideas and words, when affection and beauty are united in one feeling, namely, in the intimate connection of all things ; in their forming, all of them, one great family, of which all are members.

It is at this time that inborn sympathies should receive their first fertilization, by means of the poetical beauty and the poetical legends in plant-life.

The authoress has followed this plan for years. Starting with the sphere as the point of commencement which finds playful application in the ball, and the shapes of rounded blocks and rings, bringing colour and form into view, certain diagrams,

representing a number of forms of plant-life, induce imitation, which, fertilized by poetic childlike narrations and observations, lead to clear perception of botanical likenesses and dissimilarities. With this we connect the cultivation of plants, and the drawing and modelling of them which lead to a desire, full of intellect and poetry, for a scientific classification.

The possibility of such a methodical development has become a reality.

What is here given has been applied in life and proved successful.

The co-operation of school and home, of mother and teacher, is the one thing needful.

May this, with God's help, be effected!

EMMA MARWEDEL,

Of San Francisco (California).

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## PART I.

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### *Kindergarten Games, and those directed by the Mother and Family, considered as to their meaning and practical use.*

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INCREASING insight into human nature makes daily plainer the necessity of a system of development educationally regulated, which shall strive to connect the beginning of life with its continuation and its issue.

As the smallest child naturally reaches out its hand to the ball held in front of him, and thus in play acquires the experience of shape, colour, space and time, and at the same time promotes his physical development by moving and pleasantly exciting himself; as his sense-perceptions grow by seeing, feeling, and hearing the ball or balls, it is incumbent on the mother to animate the child even before it can understand words, by joyful stimulation, which it needs both physically and mentally.

Professor W. Preyer indicates in this sense in his "Soul of the Child," the qualifying, pacifying impression which his own voice and the mother's singing made upon his boy in the sixth and seventh week already; and how the child's eyes and body had followed in the fifth week the candles on a Christmas tree, and in the sixth week the movements of bright tassels and of a lighted hanging lamp.

This confirms the possibility of early external influences, whence the question arises, can these become beneficial or hurtful to the child? Now, as to these influences, we should commit a great error in attempting to direct them upon the child's intellect. Amongst the different medical authorities the French-American physician, Ed. Séguin, rejects with earnest warmth every effort towards intellectual awakening of the young child.

He says: if each child were allowed to unfold itself physically, his only normal development would be attained thereby. We should have to admit that the child's brain activity altogether does not form a prominent characteristic while of tender years, and that it is an error to recognise a rational judgment in that which really is only the expression of his feelings; and that we cannot without danger fill his brain with impressions which in later years might bring about hurtful mental consequences.

Further, that if the impressions to be conveyed to the child are not brought about by the organs of sense, they can have very little lasting influence on the child's actions, and certainly none at all on his later life.

Séguin further points out the difference, founded on scientific grounds, between the various affects and emotions which the stimulation of the sensations in comparison with those of reason produce, a psychological view, to which confirming documents daily testify.

As, for instance, the question why the mortality of infants in excellently healthy institutions, in spite of these advantages should be greater than under insanitary circumstances in poor families, is explained by the caresses of mother, brothers and sisters, which have an animating, and gently stimulative effect.

How great and acute the power of discrimination in this direction may become, even in the second month, was made clear to the authoress in a pleasingly well-kept crèche in Vienna. A little girl was screaming frightfully, enough to rend one's heart; the question as to the cause of this, was answered by the assertion that only her mother could stop her; she was coming, it was said, about noon to quiet her, and take her home. In the morning the little one would be content with any artificial food, and keep quite quiet; but at the above named time she would refuse everything, and her anguish could not be quieted by anything, and yet the child was but two months old.

Who knows how many millions of children's organisms are disturbed and undermined in a similar way? how many unwept tears consume the body, and, as a slow poison, destroying vigour and life, change the clear, strong will of an infant still in the cradle to wilfulness and obstinacy? Who knows the disgust and the scale of pain of this dumb being, as Preyer so tellingly indicates? None would have understood the speech of pain of that infant of two months, if the surrounding circumstances had not made it so plain.

We see what power the child's own mother has. How much her motherly sympathy and thoughtful play can penetrate the budding-growing soul! Above all it is the dancing, coloured, round ball, full of motion, which father and mother hold out lovingly towards the outstretched hands of their first-born. Each smile, each sign of a distinction, brings with it new notches in the score of conjugal unity. But what is it which suddenly increases the child's attention? It is the sweetly enticing sounds of singing with which the mother opens the box with the game of ball. It is the rolling, swinging, hopping, and turning movements of the little play-comrade let loose, with which the mother rhythmically now slowly connects her voice, now swiftly,

now high, now deeply ringing. It is rapturous motherly love, in a thousand unmentioned and unknown acts of love, while the delighted husband and father never saw the value of pure family life in a more beautiful light.

But these positions, full of movements and change, kept wisely within bounds, urge the educating mother in the opposite direction, that is, the symbols of law and order, of harmony and beauty. Form and coloured figures are brought into view under the simplest conditions; their arrangement coincide with the child's inborn impulse of construction. This is little satisfied in a young child. Without exciting the imagination, the monotonous plaything, devoid of colour and sound, falls to the ground, and gives no nourishment to the awakening power of fancy. Children's playthings, except in Froebel's system, no longer the product of the small individual industry, come insufficiently finished by thousands of the same objects to the market. The cheapness of these toys, and the facility of replacing them, calls for no respect. The child plays till he is tired of a thing, and throws it away so that he may get something else.

The following games, to be directed by the mother, aim at removing this evil. They are not quite new; for the drawings, especially, I am indebted to Herrn Director A. Fellner in Vienna, but the arrangement is my own.

Froebel's ball-songs here used are to be had in their complete form at Messrs. Pichler & Sons, in Vienna.

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## 1.—FAMILY BALL-PLAY.

Froebel himself says : “ Man, like every being, develops himself according to simple necessary laws. The more clearly these laws are recognised, and the more thoroughly they are applied, the more completely, peacefully, and joyfully does the human being develop in the child.”

The more education consciously follows these laws, the more surely it will attain quickly its end, the wished for goal.

The most essential and the simplest of these laws of development is, that the power in the child shall grow stronger; in growing stronger shall develop itself; in developing shall exercise itself; in exercises shall manifest itself and work; and by manifesting and working raise itself to consciousness and insight. By the mother simply saying or singing

“ Open your little hand  
That the ball may in it stand,”

she indicates the filling up of space; and with the words

“ Make with your hand a nest,  
For the poor ball wants rest,”

she indicates repose :—

“ The little ball lies in my hand, so quiet and so still ;  
I'll gently rock it till it sleeps, and nurse it well I will.”

or—

“ The ball is fond of moving,  
It likes to be a-roving ;  
Moving, roving, moving, roving.”

A friendly mutual relation takes place which eventually connects itself with the observation of direction in space—as the horizontal, the perpendicular, and the shape of the circle and arc.

The games can be carried on by the child itself, or by the mother or her substitute, and are calculated to satisfy the child's impulse of activity.

The oscillating movements, those of pushing and falling; elastic movements, those of circling and swinging; and the spiral line, carried out by means of a little stick, animate the child's mirth.

Now our song is :—

“ The ball against the wall I'll throw,  
Now back into my hand 'twill go.”

or—

“ Oh ! my ball ; fall not, ball ;  
Oh ! dear ball ; fall not, ball.”



or—

“ High, low ! high, low !  
 See it come, see it go !  
 See it fly up high, high, high !  
 Pretty ball, come say good bye.”

Froebel closes with the words, “ Let these words and games work in a formative and moral way ; let them be the goal of all real juvenile care. Dear mother, dear guardian of children, the purpose for which we hand you over these songs and these games, is true unity ; they are to connect you more intimately with your child, and through the child with your husband, so that all may be united in family happiness and joy.”

Four plates give the directions for these games. A little bag holds two balls. It would be a great mistake to conclude that these games are to serve the child as lessons. They are to be nothing more than merry pastimes, not only for the child alone, but for the whole family ; and are meant to answer the oft-heard remark, “ But what can one play at with so small a child, who understands nothing.” That is true ; still, the child requires joy and merriment, and wants inducements, wants to grasp, see and feel, and, above all, play with “ dear Mamma ” and “ dear Papa.” It is still necessary to remark that keeping time with the movements and good rhythmical speaking and singing are of chief importance. How long the game is to last ? Certainly not longer than the child wishes.

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## 2.—COLOUR GAME. “BABY’S DELIGHT.”

In this game four points of experience have to be considered, without using the means of speech, namely, form, colour, size, space and direction.

The game is composed of sixty rather large blocks in six colours, and of twelve smaller ones; further, of a coloured piece of paper and eight plates of directions. The blocks are big enough not to be swallowed by the child; the colours are fast and harmless.

Colour and form, although the first things which the child distinguishes, are nevertheless not consciously known so soon as people imagine. This was accidentally noticed by Darwin in his children. But both must be grasped early, as the understanding for everything which the child later on is to see, and must see, essentially depends on it. Preyer, therefore, already began in the twenty-first month to go through Professor Magnus’ arrangement of colours with his own boy, and had the satisfaction that, at the end of the third year, he distinguished already between nine colours, each of four tones or shades.\*

The game begins with one coloured block, which the mother holds in her hand; after frequent repetition the child will evince interest. He has learnt to recognise the form and colour. At this point the mother takes two colours, till she has learnt which of the two pleases the child best; this she makes use of by laying it on a given part of the afore-mentioned piece of paper, and quickly taking it away again. The child, whose joyful animation has grown with each step forwards, will imitate his mamma. His little fat hand lays down the coloured block without aim and purpose.

But while mamma always picks out the right spot, baby is always wrong.

Very, very many repetitions will be required to make the child, in its delighted endeavours to imitate mamma, understand amidst laughing, kissing, and head-shaking, that baby has made a mistake; until in the young child’s mind the first dawning of an idea of space connects itself with the colour. Quite by chance baby may lay the coloured block on the right place.† The joyful assent which becomes his, from mother, brothers, and sisters, makes clear to him for the first time, what is the thing to be done. He tries now consciously to find the right

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\* Vide Emma Marwedel’s Comparative Diagrams of Form and Colour, as necessary preparation for Elementary Teaching.

† A thing which is never to be forced or compared with the actions of other babies, as quicker or slower comprehension is an in-born gift.

spot, for which no other must be substituted till the child is quite clear about the first. The child's joy grows to the delight of the whole family, till at last, Papa, told of the proof of his baby's blossoming intelligence, promises that he will stop at home a whole evening and play a tune on the piano if baby will put the coloured block on the spot indicated, by quickly placing it down and taking it away again. The tune is played; papa is delighted; he even thinks he will try it himself. For him, the larger blocks indicated on the tables are placed in different combinations of form and colour.

He tries, and freely acknowledges that if the same training as his baby's had fallen to his lot, he would certainly do better; and that he wishes that mamma would play the game not only with baby, but with the other children, as seems intended, and use it at the next large children's party instead of lotto, to which grandpapa and grandmamma, who also want to play, say their "amen" for the dear children's sake. The first four plates furnish a higher degree of exercises. They are to be carried out in the following way:

One of the players forms a figure by means of blocks, and takes them quickly away again. The other players try to imitate the figure with their blocks. Form and combination of colour must be the same as with the preceding player.

The following plates offer natural and artificial forms of beauty, which are to lead to independent combinations.\*

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\* Finally, let us notice that early and repeated movements of the muscles of the eyes, give the later expression of the eye a great advantage, and therefore a kind of eye gymnastic is recommended by Professors Magnus and Preyer, which the child will give himself in his joyous animated moving of his eyes. Besides the idea of arithmetical similarities and diversities are most attractively brought before the eyes of childhood from four to six years of age.

### 3.—COLOUR GAME. “BABY’S RINGOLETTES.”

Comparison and recognition of different mental talents, or the absence of them, has lately brought the fact into notice how little the power is developed “of seeing things exactly, and then being able to accurately describe what has been seen.” The information collected by Mr. Francis Galton for this purpose from people of all classes (including women), and especially from highly gifted, scientific, and literary men, has proved their incapacity to accurately describe, for instance, their breakfast-table in all its details, at which they have sat for years under the same circumstances.

The awakening and strengthening of this intellectual power, which stands in intimate connection with the acquirement of concrete ideas, is connected with the necessary cultivation of imagination, to which alone originality in thinking, working and forming can be ascribed.\*

An immense preparation for any branch of instruction is acquired by the capacity of visual recollections and actualisation of former impressions, or “apresperception.” Exercises, as indicated in this and the preceding games, awaken these capacities, and from this standpoint cannot be too highly esteemed, as they influence, in a refreshing and encouraging manner, not only the child, but the whole family circle.

The game itself gives, in four tablets, directions for the building up of pictured forms, which ought to be always freshly invented, out of coloured rings and semi-circles. These are made of six colours of two shades and two sizes, similar. If the child has talent, especially in the Kindergarten and school, it can copy these forms on its slate with coloured chalks. In this, as in the preceding games, the happy or unsuccessful result depends entirely on the methodical guidance which the child receives. The number of rings must only gradually be augmented. Satiety destroys every impulse of creation.

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\* Prof. Froeschammer, of Munich, and Prof. Stanley Hall, Hopkins’ University, America, have greatly drawn attention to the way in which Froebel’s Method lays stress on this power.



#### 4.—THE CHILD'S FAIRY LAND OF LEAVES AND FLOWERS, OR, ROUND GAME IN THIRTY-FOUR CARDS, FOR OUTLINING AND COLOURING.

This has in view three points of experience and training :

- (a) Experience of making the circle in which form, colour, place, and direction, are illustrated by cards No. 1 to No. 7.
- (b) Experience of making the circle in comparative relation to the natural forms already known to the child : as for instance, fruit, vegetables, and leaves, by means of cards No. 13 to No. 24.
- (c) Experience and making of the divided circle, in comparative illustration of the division of the petals of flowers, and the discoveries developing themselves from these, by means of cards No. 9 to No. 12, and No. 25 to No. 30.

With fixed intention to give the free self development the broadest scope, the derivation of the circle from the ball afforded in my Kindergarten, a series of most animated and amusing incidents. The Sand Table in its many-sided applications, naturally played an important part. Neither the impressed shapes of the ball itself, nor of larger and smaller saucers, nor of the bases of glasses, nor of boxes, or of many other things, could produce the desired circle, till at length the impression of the open side of a round box lid crowned the continued manual investigations, afterwards completed by means of rings, with success, and there were loud rejoicings

Here we must again lay great stress on the necessity of the ideas thus conveyed to the mind by concrete objects (and which must on no account be overlooked), such as form, colour, number, direction, position, and size, having not to be learnt from cards as mere names, but as a series of experiences acquired in play.

The cards prepared for outlining must be pricked in the dots indicated, and be worked in zephyr or crewel wool in the six colours prescribed for circles. In the beginning it is as well if the thread is fastened into the wool needle by a knot ; yet the child should learn as soon as possible to make himself independent in threading, and not allowing the needle to become unthreaded.

#### OUTLINE CARDS FROM NO. 1 TO NO. 7.

*Card 1.*—First step in experience. Form, round colour, red ; number, one ; place, centre.

*Card 2.*—Comparison with card 1. Similarity : form, colour, size. Dissimilarity : number, two ; position, open, right and left of centre, or above and below centre ; second circle coloured red.

*Card 3.*—Comparison with card 2. Similarity : form, size, direction. Dissimilarity : colour, a red, a blue, and a yellow circle ; number, three ; position, above one another, by the side of one another, below, above, under, over, between. Each of the three circles, when well outlined, to be coloured, viz., red, blue, or yellow, whence green is developed.

*Card 4.*—Comparison with card 3. Similarity : form, colour, number, direction. Dissimilarity : size, large, smaller, smallest, and the reverse ; position, by the side of one another, following one another.

*Card 5.*—Comparison with card 4. Similarity : form, colour, number, size. Dissimilarity : direction, circle in circle ; position, centre.

*Card 6.*—Comparison with card 5. Similarity : form, colour, number size, direction, position. Dissimilarity : a perpendicular and a horizontal line, which divide the three circles through the centre in right angles.

It is advisable for the teacher or mother herself first to sew and colour these, and, indeed, all the cards.

The operations referred to from card 2 to card 1 must be talked over and illustrated, for which the sand-table, slates and diagrams come in appropriately. Cheerfulness and originality should dissipate even the slightest breath of pedantic teaching and proceeding. The colouring should be allowed as an inciting reward.

#### OUTLINE CARDS FROM No. 13 TO No. 24.

These, as already indicated, lead the child from the inanimate circle to the tangible circular fruit, to vegetables and leaves. All these objects are at least known to him by sight already, and most of them liked by him. By occupying the child with that which the child is fond of, we have hit the only sound point of connection between teaching and learning. In my circle of little pupils, the ideas of animation and want of animation have, by the knowledge of the great reciprocal action resulting of forces and the exchanges in nature, proved itself, in the simplest childlike sensible way, as morally fertilizing, and imparted to the mind a warm view of all things. Of course, a large garden with beds of flowers and vegetables called those children, who had the personal care of it, oftener into the garden than into the rooms. One detail may be mentioned. All seeds were called "Baby-seeds." The flowers were either

"Mamma" or "Papa" flowers. All related plants and animals were called, even by the smallest child, "families," "brothers and sisters, or cousins," while the young child should always learn to think of man as the "All-protector." It is here impossible to dwell on the emotion and growth of feeling which, under proper guidance, result almost spontaneously. They prove more and more the inner mind of the child working and forming, who more than we suppose reaches, by his association of ideas, final conceptions which form the basis of his views of life. Not great things are what we have to teach; but great things may finally be reached by means of the small things which we do teach.

The ideas which connect themselves with coming and going, helping and serving, giving and taking, beauty and proportion, regularity in development, afford endless material for true culture of heart and mind.

It is, above all, required that the objects contained in the cards should be seen and felt by the child, and should be imitated with their colours.

Comparison of the objects similar to that dwelt on above, as to the circles, can be made on two slates, for each object. It comprises form, colour, size, weight, enumeration of beauty, parts, utility, and use; further, in comparative view, stem, leaf, blossom, and as to fruit, the taste; when raw and when cooked (if possible in the school room), as to touch, fresh or not fresh, as to inner construction, and infinite other aspects. Of course the forms must be copied in clay and paper.

#### OUTLINE CARDS FROM No. 7 TO No. 13.

The circle here appears in spiral divisions, by means of which the child is led to contemplation of petals and flowers, and in patterns 10, 11, 12, gives suggestions for inventions; the perforated form being left to the child's free use. These lead from the simple corolla to the sunflower in twelve or more parts.

Each mother, each teacher will not fail to prepare by herself what she intends to do, so as to be able to suit the child's comprehension.

Beauty, growth, utility, the legends connected with the lives of flowers, as well as the intimate relation between the lives of flowers and insects, afford endless points of connection for descriptions, tales, stories, and practical demonstration. What is sown in the mind in such sacred hours is sown for eternity.

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The Baroness von Mahrenholz Bueow, the world-wide known interpreter of Froebel's method, consents fully to the use of the curve on account of the



moral effects on the feelings and the early intellectual conception of the laws and beauty of nature therewith obtained.

And Fedor Flinzer, the distinguished pedagogical writer and Inspector of the Drawing Schools at Leipzig, says:

"Your plan has my heartiest sympathy! The arrangements by which you lead the child forward and backward to recognize an endless number of varied forms in the simple elementary form of the curve, is very sympathetic to me, as it is based on the same principles from which my own method of Free Hand Drawing starts."

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CHILDHOOD'S  
Poetry & Studies,

IN THE

LIFE, FORM AND COLOURS OF NATURE.

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PART II.

Guide to the use of Comparative Diagrams  
of Form and Colour.

As Necessary Basis for Home & Elementary Teaching.

BY

Emma Marwedel.

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*Copyright.*

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1888.

## TWELVE DIAGRAMS.



DIAGRAM I., in four divisions, containing :

Sphere, cube, cylinder, sphere divided into hemisphere, quadrant, zone, segment, peripheral parts, rings, and oval.

DIAGRAM II., in four divisions, containing :

Three primary colours, primary colours mixed, secondary colours, secondary colours mixed, tertiary colours.

DIAGRAM III., in four divisions, containing :

Shades of colours, analysis of colours, blending of colours, complementary colours.

## PREFACE.

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IN the year 1876, in sending my Kindergarten and normal class work from Washington, D. C., to the government exhibit at Philadelphia, I gave utterance to a long-cherished conviction of my own, that the ball, as representing the sphere, the type of all life, was not made sufficiently prominent in Froebel's development of the child.

Ever since that time—now a decade—this conviction has been active within me, until I have at length wrought it out, with the full force of my reason and experience, to a practical result.

I do not wish, however, to create the impression that my theory is an entirely new one; the fact being rather that it extends and systematizes the idea of the curve contained in Froebel's teachings, and which was so clearly suggested by W. Guillaume at the International Educational Congress at Brussels, 1880.\*

By 1882, my thoughts were so far crystallized that they were ready to be presented in the tangible form of, "A Circular Drawing System, or Childhood's Poetry and Study in the Life and Forms of Nature." (Supplemented with a Botany and seventeen classification charts of four feet square, in relief.)

The North American Froebel Institute, meeting at Detroit in 1882, to which able body I disclosed my plan, gave me its unqualified approval, and urged the speedy publication of my work in a series of resolutions, which had, however, been anticipated by the indorsement of such prominent educators as Professors Eugene, W. Hilgard, G. Stanley Hall, and Joseph Le Conte, to whom, on account of their intelligent sympathy and their friendly and active co-operation in my plans, I can scarcely exaggerate the expression of my gratitude. And I cannot omit acknowledging the practical kindness of the Chicago Free Kindergarten Association and the Board of the Pioneer Kindergarten Association.

The resolutions referred to were as follows :—

*Resolved*, 1st. That while we, as professed disciples of Froebel, deprecate all departures from the great fundamental principles laid down by him for the culture and development of the child's nature, yet we hail with delight all discoveries of new applications of his philosophy, whereby we can better adjust its force to the educational wants of the age, believing that truth has all-sided growth, and an adaptation suited to the changed condition of its subjects; therefore we welcome with pleasure the application of the curved lines representing all forms, vegetable and animal, as embodied in the

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\* See Henry Barnard's Child Culture.

system just brought to our notice by Miss Marwedel, of San Francisco, thereby giving larger scope and greater pleasure to the chief thought, while tracing the handiwork of the Master Builder of the universe.

*Resolved*, 2nd. That the Committee, feeling that an extended knowledge of Miss Marwedel's application of Froebel's method will be of great use to children in the school as well as in the Kindergarten, urge the publication of her book, which will also contain directions and suggestions to use these forms, and, if necessary, that the North American Froebel Union be requested to assist Miss Marwedel in any way in its power.

*Resolved*, 3rd. That a committee be appointed to confer, if necessary, with publishers of Miss Marwedel's book.

In pursuance of the third resolution, a committee on publication was appointed as follows: Miss Elizabeth P. Peabody, Mrs. Horace Mann, J. W. Dickinson, J. M. Sill, and W. N. Hailman.

But with all this encouragement, supplemented as it was with the logic of my development of the curve, and by W. T. Harris's argument, I was still unsatisfied. I felt that I had not yet touched the right spot in human existence, whereon to base the fair structure of human education. Thought upon thought drove me back over the steps the human being traces in his ascent to manhood. I reached the home, the mother, the cradle. Here, at last, in the mother, to whom Froebel dedicated the first use of the curve, I found the place where the corner-stone of any genuine education must be laid. But where to find that stone which should become "the head of the corner"?

Another Kindergarten Congress and Exhibit, at Madison, Wisconsin, in the summer of 1884, brought my Circular Drawing System again before the public, and showed such renewed interest as gave promise of general adoption. The Chicago Free Kindergarten Association and the Cook County Normal School (under the principalship of Col. Francis W. Parker) induced me to give explanatory lectures on my Circular System of Drawing, a task which I performed with delight, as I had become fully assured of the instructive pleasure and creative impetus imparted by this method to children, even from the age of four years.

But the task, as a whole, is one I should not have ventured to undertake, were not the book, after all, *The Child's Book*, and its creation due to my living with children.

It reflects the many sacred hours spent in watching and directing the unfolding of their budding souls, and in loving study of their educational needs. It reflects also a thousand divine sparks of childhood's purity, poetry, righteousness, and reason; its devotion to duty, and its hitherto so much unappreciated altruism. My inspiration in writing this book has been, *sympathy* with the mother in her immeasurable responsibility;

the condition of *childhood's rights to justice and happiness*; and finally, an abiding faith in the mental and physical evolution of the race. So let me hope that it will lead the mother and the educator, as it did me, inward to the depths of the nature of the child, and onward *with* the child.

EMMA MARWEDEL.

P. S.—This seems to be the proper place to express my most deeply felt gratitude to those who crowned my work in its embryo with their sympathetic co-operation and faith, in the spirit of true sisterhood. They are my two most unselfish acting revisers, Mrs. M. G. Campbell and Mrs. A. I. Toomey, the late Mrs. Horace Mann, Miss E. P. Peabody, Mrs. Robert Fowler, Mrs. A. T. Kelley, Mrs. E. G. Greene, Miss Kate Atkinson, and many others; not to undervalue the document of the Woman's Christian Temperance Union, promising to favour my aim of awakening "CONSCIOUS MOTHERHOOD."

A year has elapsed since the lines above gave utterance to my life aims. These words are written in Germany: I expressed last year in America my deeply-felt gratitude to those who crowned my work in its first part ("Conscious Motherhood") in the spirit of true sisterhood, and now I have to state that another noble generous sister of the same spirit enabled me to have a second publication brought before the public; without her substantial, noble assistance nothing would practically have been done. It was, furthermore, through her assistance that I was allowed to compare English and German methods of teaching with those in America; especially those branches destined to combine according to Mrs. Endora Hailman's profound motto: "the head, hand, and heart education." I met everywhere with the utmost courtesy and assistance, accompanied with high esteem of American schools, and her unparalleled enthusiasm and generosity in deeds and practical work for the introduction of Froebel's method for the early development of the child. Intercourse with the most distinguished European educators of both sexes has consolidated likewise a cherished plan of mine for an International Educational Union. A number of names has been given to carry out the idea of an exchange of educational aim and practical thought.

All this may be revised as fruits ripened under the warm sunshine of the friendship of the best I met in all countries.

BRAUNSCHWEIG (BRUNSWICK), GERMANY.

July, 1888.

# INTRODUCTION.

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## *Form and Colour as a means of Education and Instruction.*

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No epoch of culture can be judged without reference to its understanding of form and colour. The clear perception of simple grandeur among the Greeks, the artistically original creation of their mythological statues, and the harmonious perfection of their bodies, shows an insight of the relations of form which causes astonishment to our cold mathematically artistic imitative age. Still, we must admit that the sense of form is to be regarded as one of man's strongest natural gifts.

Form is the first language which becomes intelligible to the child; it is the most impressive, the most unquenchable, because it falls on the yet unwritten page of his soul, the first means of development which leads him from the unconscious to the conscious state. It was the shape of the bright oval of his mother's countenance, says Professor W. Preyer in his "Soul of the Child," which my child first consciously followed with his eyes. It is the form of expression of will, of delight, of dislike, of longing, of assent and of negation, which replace in the infant the want of speech. To leave this early appreciation of form without developing the nourishment necessary to its growth, is against the demand of nature. Children hardly able to use a pencil are yet eager to use it. Inborn creative power urges them to give way to one of their strongest natural bents—the satisfying of the sense of form.

In most cases a simple ring, a point in which the child dreams over again the chief events of days and hours, is sufficient for his child's observant eye. In spite of these hints of nature, of all means of education, nothing has been left more to chance than an early comparative understanding of form and colour; and with this an early feeling, seeing, and understanding of the beautiful and orderly in our surroundings and in Nature. Therefore few are capable of using form as an expression of ideas, a thing in which the ancients and primitive nations were and are so far in advance of us. Why should this be? Because there is a notion that an understanding of form is a special power—not a general one; but is to be regarded as an individual gift seldom found. Yet this view is decidedly

contradicted by art industries of carving among the Swedes, the Swiss, the folk of the Tyrol, and of Thuringia, as well as in many primitive nations.

Drawing, especially if early helped forward (Commenius already lays great stress on this), is not often treated as the development of a power inborn in the child, and is consequently not attributed to a normal power of grasping and shaping which only requires methodical training, but as if it were an activity acquired with difficulty, depending on comparative calculation.

Form, the universal language of nature, falls into few elements. The difference of their combination only effects the multiplicity of their appearances—Fred. Froebel illustrates this by the sphere as opposed to the cube and the cylinder, as medium, connecting both. By an early conception of unity and variety of these principal forms, he leads the child to deduce harmony and unity from opposed points and does this by means of personal experience with this plaything, and, by this means leads the natural sense of form unconsciously to studies of form, whose educational importance extend far beyond the goal of a practical power. Complaints are made of the dearth of individual creative power of the present day. This partially rests on the child's early estrangement from what is his very own. Neither home nor school call forth originality or individual desire for work. "That will come later on?" it is said. Later—when all originality has already been killed. Still more is the educational necessity of an early contemplative influence of nature on the child's soul undervalued, and thus people fall into the inconsiderate zeal of forming instead of developing. How much of individual working power hereby is lost is incalculable.

On the other hand, it is not to be denied that modern education begins to recognise in the understanding of form and colour, one of the most effective means of raising and strengthening the senses and the feelings, namely :

By practice in seeing, so that the capacity to distinguish by comparisons and form may be early developed.

By practice in higher feelings, so that he early learns to understand beauty and harmony in Law, and permeated by this understanding, may become stimulated to individual compositions of form and colours.

By practice, in thinking, so that he may early learn to compare a whole with its parts ; and again, different parts conceived as a whole, making thereby clear to himself similarity and dissimilarity.

By practice and experience for practical knowledge, the absence of which is laid great stress on by teachers and specialists.

The teaching of form and colour must therefore be regarded



as one of the most important means of education and occupation : a truth which is nowhere more clearly demonstrated than in the Kindergarten—not as a consequence of direct teaching, but following the analytical comparative sense of form and colour, which is developed before it has attained a practical use.

The curve, so prominent in the child's ball, in its direct relation to the lines of beauty in nature, as well as the connection of the shape of the ball as original type of all that lives and moves, in its mathematical relation to the teaching of form, in consequence of general considerations which guided him, was placed by Fred. Froebel, at the end of a series of forms. He limited the application of this form, and yet, in its symbolic value, and its unchangeable unity and simplicity, it ought to be regarded as the point of commencement for the aims to be attained. This is the reason why the authoress begins with the circle in her teaching of form and colour.

The simpler and more intense is an expression, and the more often its repetition takes place in animating change, the more permanent are the healthily educational effects on the child.

The outlines of the simplest forms of Nature which surround the child are therefore earliest comprehended by him, and first awake the wish of imitation. The child sees in the ball the round apple, and at the same time tries to recognise the difference between them both, because he is fond of them both. Educational guidance has to avail itself of this : appearances of colour, form, size, outer and inner construction have to be connected with personal experiences, but not with the heaping together of externally given words—stifling all individual conception—but by activity, which leads to true knowledge.

The recently instituted official examinations into colour-blindness and short-sightedness, have given rise to much thought and earnest effort to remedy the evil. In connection with this, Professor Virchow recently spoke out before the Anthropological Society in Berlin, that he was obliged to recommend his young students colour studies at the beginning of each fresh term, as he found them incapable of distinguishing red, blue, or brown, on black ; or yellow, white, or green, on grey. So important did this shortcoming appear to him for the totality of human culture, that he made a petition to the Reichstag as to how this could be avoided. The state of affairs seems still more grave when celebrated oculists inform us that in schools, especially elementary ones, the perception, understanding of mixture, shades, and grades of colours, is paid no attention to ; which is the more to be pitied as Tyndall, in a prophetic anticipation of the future of a higher developed sense of colour, points to the existence of a wealth of colours as yet undreamt of. Canon Farrar, of Westminster Abbey, says in a lecture

before the London Society of Arts: "Each neglect of art as a means of education must carry with it great drawbacks. We give early instruction in reading, writing, and arithmetic, but the far more important development of feeling and understanding for all that is beautiful, is shown to be completely neglected. The same child, who can tell you how many pounds of meat he can get for a shilling, has probably never inhaled the odour of a rose with exalted feelings. Let us then before all begin with the culture of the senses in our homes and schools." At one of the meetings of the Teachers' Society in Leipzig, the painter and inspector of drawing, Fedor Flinzer, spoke on the growing necessity of modern education on a psychological basis, and of analytical comprehension of form and colour, which has to commence with external objective conception.

And now as to the child himself? Observe his nature, his activity. Science maintains that the strength of sense of the child till his eighth year is greater than that of an adult, and later on diminishes. This becomes manifest when we consider what he acquires, without our teaching, by the activity of his senses within the first four years, two of which were passed without the means of speech. The child wants to know, wants to learn, but not by passively receiving.

He himself wishes to see, hear, taste, feel, and smell; he, so to speak, dictates the course of his own teaching. Free conclusions of reasons lead the child to free investigations about the what, how, why and when. The great principles of alternating influences, of continual permutation of matter, the incorporation of that which was, is, and will be, does not enter his young fresh child's soul as science, but as a perception of his senses. This is the time when the beauty, the harmony, and the laws of life must enter, like fertilizing sunbeams, in the emotional life of the child. The child knows it; he wishes to strive with his own powers for this self-education. He instinctively reaches for form and colour. He tries to copy fruits and flowers faithfully. The cherry is imitated on paper; but nothing is round, nothing looks real. That is too much trouble, says the teacher of his older brother. What is trouble? says the child. If one wants to do something, one must know how. I want to do it well! or else I don't care for it. I only wish, continues the young philosopher of six years, if you would tell me if there is a colour to begin with, how to make it lighter or darker, how to paint a rainbow, and how to make the flat piece of paper look so that I could think I could at once pluck the cherry that I see. Then busy-body Charles, as he is called, stumbles in with a newly finished wooden box. Yes, he says, "the colours, the colours," that is what we have long wished for in our manual labour-schools. A piece of work would be

done by us much quicker, and perhaps better, if we knew we could finally colour it. I have heard that all savages use colours, and how much will they not give for glass beads. And, says wise Minnie, if your teachers say that you are to learn to see, you must surely, before everything else, learn to see colours, for nearly everything in the world has its own colour. And something more, says Susie, as all learning, as the teacher says, is founded on doing, it cannot be but they will give us the colours to mix and use ourselves, especially as I have heard it can be done, without any mess, with a dry pencil. Yes, said Paul, I saw a little while ago clay-modelling from an American public school which were all beautifully coloured, to the immense delight of the children.

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## PART II.

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*Guide to the use of comparative diagrams of form and colour, as necessary basis for elementary teaching.*

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THE above title may seem startling in its extent: but it is necessary to preface that the principal stress is to be laid, not on the number of objects, but on the unity of their connexion, as the aim before us, is to let a number of various educational influences reach the child, which, among themselves, form a connected whole.

The beginning is made by the so-called Mother's Games, for the infant in the cradle. Adapted to the impulses born in him, they lead from the nursery to the preparatory school, and from this to the elementary school, amidst special consideration of the sense of form and colour, the understanding of the life of plants, by means of coloured imitation on a botanically instructive basis, being kept in view as the final goal.

I proceed here from the same principles which Mr. Oscar Browning, of Cambridge University, in England, lays down in his published letter in favour of Froebel's Principles of Education. He notices the exactness with which a boy was able to give an account of the details of a cricket match, although it had lasted for hours, and consisted of many complicated incidents; a proof, that his power of memory had increased in the same ratio as delight, animation and joy were connected with free mental activity. Thus referring to a fundamental principle of Froebel, Mr. Browning continues: "If we are obliged to acknowledge Fred. Froebel's method of education and teaching as appealing most to the universally ruling laws of nature, then the consideration of a difference in age is quite removed, and I see no reason why it should not here possess equal validity in our universities."\*

The above fact shows that choice of objects and choice of circumstances must co-operate, therefore, that methodical arrangement is necessary for the teacher.

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\* By the late Professor Joseph Payne, of the College of Preceptors in London, Froebel's teaching has not only been brought prominently forward by means of lectures, writings, and teaching, but eminent men like Darwin, Huxley, Holyoake, H. Spencer, and others have been brought into the circle of advocacy.

## AIM OF THE PLAN OF TEACHING.

Activity and action are the first appearances of the awakening child-life, and are indeed expressions of his inward and inmost nature. To use these so that activity and action shall work together self-educationally, shall be connected, in form and expression, with the progressive development of higher morality is the chief aim of teaching.

To its service belong :

1. Gymnastics of the hand, and by means of, and by the side of these, the development of reason, heart, and will.

2. The awakening of energy of action, and its control by morals.

3. Early introduction to nature, knowledge of its regulated beauty, which guides religiously poetical admiration from the created thing upwards to the Creator.

4. The capacity of connecting impressions and perceptions with sensibility and putting into concepts, and again giving expression to these by words and actions, only takes place by means of clear observation. This finds itself opposed by the chaotic influence inevitably pressing upon the young child from among his surroundings, chiefly in consequence of the great receptivity of his senses not yet wearied by life. Rousseau, indeed, lays great stress on this circumstance; yet its importance for the development of the child's soul and body is unfortunately too often neglected. This, perhaps, may afford full explanation of the necessity of regeneration, acknowledged to be necessary, of the inhabitants of cities by country people.

"The child sees everything" is the current phrase. But this is often not true for the child in ordinary schools, where his senses have not been trained, but rendered dull: it is true for the little child who has had his senses brought nearer perfection by his own self-training.

How shall we clear up this chaos? How protect the child from superficiality, and guide him into well determined ways, without standing in the way of free development by self-activity; as yet too little taken into account, that has been and will for ever be one of the most difficult problems of education.

Already Egyptians and Greeks recognized what has since been declared by Pestalozzi in his A B C of form, and later on by Fred. Froebel and modern educational theories, viz., comprehension of the regulated limits of solid bodies is the most efficacious means to attain this aim.

For what has already been done in this direction towards methodical application, we have to thank Froebel, especially in his so-called seven first Gifts. They afford that bright combi-

nation of satisfaction felt by the child, of freest and individual creative activity on the one hand, and, on the other, that educational limitation—a combination whereby the child conveys to himself in a free and playful manner the necessary teaching by exercise, and thus frees his mind from unconscious scattering of his attention over the things presented to his view, and arrives at the conscious understanding of mathematical unity and the regular multiplicity proceeding therefrom. By knowledge of the round shape of the ball, the faces, edges and corners in the cube, and the connecting link, the cylinder, the three fundamental forms afford in their related, and yet sharply different connections, in their divisions, their space, size and number, a form of development adapted to the child's age, still very much undervalued, and in the place of which nothing else has yet been offered.

And further, it is possible to derive great advantage in our teaching from these seven gifts in connection with the so-called forms of life and beauty, in building up with these blocks historical monuments, and by several children acting together, more extensive representations of constructing buildings and gardens, and in grouping forms of beauty. But it is impossible to bestow on the child of six years old all the educational benefits which could be derived from the proper use of these gifts. As there is neither a continuation of Froebel's Method in the schools (at any rate, not in Germany), nor as yet any connection between the development of ideas in the Kindergarten and its continuation in the elementary teaching of the school, it appears that (unless the child is to be utterly deprived of these benefits) form and colour should be treated in our schools in the same manner as other branches of study.

### 1.—METHOD OF TEACHING.

Starting point from that which the child knows.

Point of connection with that which the child would like to know.

Point of connection with that which the child would like to know and could know.

Final aim, to induce the child to want to know what it ought to know.

### 2.—MEANS OF TEACHING.

Concrete contemplation of the harmony of the True and Beautiful in the lawful order of Nature: having in view to impress the religious and moral unity of all things on the child's mind, so that his seeking after truth, thinking truly, and working in truth, may be developed.

Comparative contemplation of cause and effect, having in

view to utilize self-acquired conclusions as conscious promotion of intellect and character.

Ethical contemplation, having in view the ennobling of the senses and the emotions to serve as the spiritualizing principle of all learning.

Contemplation of Nature: having in view the being able to derive true recreation and exaltation from simple natural pleasures of Nature by means of a clear understanding of them.

Contemplation of forms: a methodically drawn series of coloured forms of beauty and nature, to serve for individual inventions and imitations.

Curving movements of the hand, especially of the wrist, with the object of preparation for writing, drawing, painting, playing the piano, and other manual dexterities; the advantages of which coincide with the demands of the well-known physiologist, Professor Brown-Séquard, who insists on the equal use of both left and right hands, in order to induce the necessary equal flow of blood to the brain.\*

The application of the curved line. It is already known to the child by its ball, and by copying pictures of plants with their rounded lines. The curve bears with it in its unity and variety, its immutability and rich symbolism to everything which lives and moves, the most intimate relation to that which the child sees, feels, and loves; and offers in its affirmatively—warm pliable line, the opposite to the negatively—cold, disjointed, angular forms, with which the young child feels no warm sympathetic connection as they develop sharpness of intellect instead of emotions.

The divided sphere and the application of its parts with a view of furnishing the child with the forms necessary for his imitations and inventions, in which he is to receive methodical guidance from the teacher. These imitations and inventions can be executed in forms of cement, wood, or cardboard, later on by compasses, and finally by measuring with the eye.

The divided forms of the sphere bring before the eye a

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\* Practice of the left hand: In the training school of the Imperial Institution for Training Female Teachers in Vienna, special attention is given to the culture of the left hand. With this purpose, in the elementary class of the primary schools, tying knots with string is taught, an exercise in which both hands alternately are active in equal measure. This is succeeded by exercises with thick wool, on very coarse canvas, woven for the purpose, likewise alternating with the right and left hand. At first it is the same to the children which hand they use, only afterwards does a certain awkwardness of the left hand step in, which is not natural, but a consequence of neglect of education. The aim of equally exercising both hands is not that of making the child ambidexter, but especially to avoid a one-sided position of children, which unfortunately frequently leads to curvature of the spine. (Gabriele Hillardt, Teacher of Needlework in the Imperial Institution for Training Female Teachers in Vienna.)

series of nature-forms, viz.: the calyx, the open flower, and the receptacle in the hemisphere and the sphere peripherically divided; further, divided blossoms and leaves in the segments, zones, and ovals, while the circle may serve to convey a picture of the inner structure of trees and branches. These aids are intended to serve as object-lessons by comparing, repeating, and strengthening self-acquired experiences. It must not be supposed that the value of these aids are hereby exhausted. On the contrary, the more my thoughts and proposals are superseded by the spontaneousness of an original teacher, the greater is the advantage which the child will derive.

It must not be overlooked that the following scheme of teaching, although proceeding towards a general development, brings out only a part of general knowledge.

#### FIRST OBJECT-CIRCLE.

The coloured ball of wool and the three fundamental forms: the wooden sphere, cube, and cylinder.

#### SECOND OBJECT-CIRCLE.—DIAGRAM I. IN FOUR DIVISIONS.

A, the sphere. B, the cube. C, the cylinder. D, the divided sphere.

#### THIRD OBJECT-CIRCLE.—DIAGRAM II. IN FOUR DIVISIONS.

A, Three primary colours. B, primary colours mixed, developing secondary colours. C, secondary colours. D, secondary colours mixed, developing tertiary colours.

#### FOURTH OBJECT-CIRCLE.—DIAGRAM III. IN FOUR DIVISIONS.

A, shading of colours. B, analysis of colours. C, blending of colours. D, complementary colours.

#### FIFTH OBJECT-CIRCLE.

(\*Two plates contained in this book.)

Series A. Indicating one hemisphere undivided, as to form, Diagram I. D, No. 1—as to colour, Diagram II. A.

Series B. Indicating one hemisphere divided into circles, as to form, Diagram I. D, No. 1—as to colour, Diagram II. C.

Series C. Indicating one hemisphere divided from the centre, as to form, Diagram I. D, No. 1—as to colour, Diagram II. D.

Series D. Indicating segments, Diagram I. D, No. 4—as to colour, Diagram III. A.

Series E. Indicating peripheral parts, as to form, Diagram I. D, No. 5—as to colour, Diagram III. B.

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\* All these patterns, also on outer case, are inventions of pupils of E. Marwedel's Kindergarten and School, from the ages of 5 to 10 and 11.



Series F. Indicating rings, as to form, Diagram I. D, No. 6—  
as to colour, Diagram III. C.

Series G. Indicating lines of beauty in the oval and independent use of all lines, as to form, Diagram I. D, No. 7—  
as to colour, Diagram III. D.

### 3.—OBJECTS TO BE USED.

The forms developed out of the sphere, to be traced by the child, for the formation and composition of inventions as indicated, and for gaining comparative views of the forms of Nature, are to be made either of composition, wood, or cardboard. Further, we require sponges, slates, drawing-books, the coloured pencils of Conté, in Paris,\* rings, little egg in egg-boxes or Chinese ovals, compasses, scissors, modelling clay, and coloured paper. All the objects to be used must really be at hand. Should the child come to us, either from another Kindergarten, or from a family in which Froebel's system has been properly used, then the experiences playfully acquired by means of the first, the second, perhaps even the fifth gift, will have already given the child clear perceptions of the difference of fundamental forms. Still, we here suppose complete ignorance of them.

That such complete ignorance is, indeed, not possible is evident. Yet any preliminary knowledge will be different according as the child comes from the town, the suburb, and the country. That Nature and natural objects, and personal experience with those objects, have the best results, was recently proved by examination held on the proposal of Mr. Stanley Hall, Professor of Psychology at Hopkins University, America. The percentage of satisfactory answers was greater in the negro children than in the children of that town of intelligence—Boston. They had lived more under the impressions of Nature.

#### FIRST OBJECT CIRCLE.

*The Coloured Wool Ball and the three fundamental Forms: the Sphere, the Cube, and the Cylinder.*

#### A. COMPARISON BETWEEN THE COLOURED WOOL-BALL AND THE WOODEN SPHERE.

*Short Indications for the Development of Word, and Ideas of Form, Body, Colour, Movement.*

The lasting point of connection of the ball, for all ages, as well as its attraction of form and colour, lies in the grace of its

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\* These fully take the place of water-colours, they avoid all mess, and are so superior, that experts doubted whether all my drawings done with them were touched at all with pencil.

movements. The symbolical relation to life proceeding from this point, and the manifold various appearances of movement under the mother's playful guidance and fancy, appear in endless variety, and the ball forms the most attractive plaything of childhood and youth. It was therefore a wise thought of Froebel to make use of this attractiveness of the ball as the foundation of a first development. Form, body, colour, movement, direction, and space, are the first points which strike the child about the ball. These points of distinction came much earlier to his consciousness, before he was able to express them in words, still less, by comparison, to clothe them in definite distinctive concepts. But it is the power of comparison alone which leads the child, by means of sense-perceptions received, to connect them with experiences of similarity and dissimilarity, to form ideas from them, and develop thoughts which, after much striving, came forward by capacity of expression.

This is a long way. W. Preyer shows us in his excellent "Soul of the Child," how this power slowly ripens. The faults never to be remedied in after-time, especially of the usual object lessons, lies in this: that one accepts the words the child utters, like an echo, as the proof of a living, inner, animated idea; and that one thus declares the memory to be fully sufficient, whilst it should only be made use of as a hand-maid.

Froebel, in connection with the imagination,\* grants and demands years for the practice for the strengthening of this necessary capacity of mind; which, above all, School-teaching, requires whilst the school complains that it can find no time for this mental substruction.

To sum up, the ball is to serve the child to clear up and give expression to the above half clearly-thought concepts.

This requires the knowledge of "what the ball is." In so far as the child can denote the thing in hand, viz., the ball, by the name "ball," it shows a certain degree of knowledge, as it knows that another object of equal size "is not a ball."

That it is the Form which makes the difference is therefore to be brought into connection with his experiences; it coincides with the concept of Body. Both concepts must be produced by means of visible and tangible objects.

Only the repeated viewing of the object in attractive repetition can firmly fix the word for the concept in the mind.

To be able to form this gradual process, so that child and teacher shall forget that it is a deliberate one, is the gift, without which no one should attempt to influence pupils. The child is the best guide for this. Without sympathetic and awakening animation of the feelings which meets that which is

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\* *Vide* Professor Frohschammer's "World of Imagination." Munich.

to be given with an open mind, conscious of a natural mental need, no success is to be expected. There must be a desire in the child. A few introductory words from and to the children, the beauty of the day, or a tale, will be sufficient.

*Short Remarks on the Aspect of Words and Ideas of Form, Colour, Body, Movement, and Direction.*

*Form and Body.*—Activity and action are the most important means from which to derive concepts from experience.

Simply holding up and turning the ball round in the child's hand, leads most certainly to the conception of form and colour; they touch qualities which the ball has in common with all objects; it is therefore necessary soon to point these out to the child as fixed appearances of all things. And this greatly lightens for him the aspect of special qualities.

This often takes up a good deal of time, yet it is and remains "Play"; and who can venture to record the mind-fertilizing sparks of natural emotions which have their lasting impression in such hours? The child holds his ball high up in his hand and now we have these questions: "What do you see? What is its name? How is it to your touch? What do you notice about this ball? Bring forward objects both similar and different. In what were they similar or different? Are all objects visible and tangible? Bring forward objects which you can neither see nor feel: what follows from that? What does it show? Can you see and feel your neighbour? What do you call that in your neighbour, Henry, which you can see or feel? Choose a big and a little child; feel them both with your eyes closed; are they alike? In what are they different—only in size? Feel the faces, the noses, of both; in what will you say they are different? Let somebody bring forward two objects which are very different; why and in what are they different? Is there a fixed word to determine the difference for which your hands, without the use of your eyes, will suffice?"

*Colour.*—A fresh bunch of flowers, coloured ribbons, the children's dresses are sufficient for developing the idea and the word "colour," which can and should be strengthened by the use of the block and ring games, which are described in Part I.

*Movement and Direction.*—The ball itself, after it has been thrown by the child upwards, downwards, and towards both sides, brings into practical view movement and direction, which can be illustrated by practice in the sand-table, by stick-laying, by paper-cutting, use of the slate, and modelling and marching.

*Division Games*, connected with these marching exercises, may bring the direction of diagonal and parallel lines into use, the movements being carried out now slower, now quicker, now

by marking-time. These are exercises which one child should give the other.

*Retrospect.*—By the experiences with the coloured ball of wool, an initiatory comprehension is awakened for the words body (form), colour, movement, and direction. A few questions by means of comparisons going backwards and forwards suffice to confirm and enlarge the experiences acquired. The exceedingly sensible gradation which Froebel offers, for comparison, to the child in soft and hard, the noiseless and the sounding woollen and wooden ball, is truly to be mentioned in its simplicity and palpability as a masterthought of Froebel's.

*Short Questions and Directions for the development of words and ideas of weight and solidity:*

“Take both the coloured ball of wool and the wooden sphere in your hands and shut your eyes: what do you feel? What do you call both these objects? What is that which is alike in both? How can the difference between both be described? Bring objects which have the qualities of the one and then of the other. Put the ball and the sphere first separately, and then both together, on your head. Let me strike you with both, one after the other: what do you feel? Throw both of them. Take both ball and sphere and knock with the surface of each.” Nothing sooner becomes easy to the child than the distinction of surfaces. Manipulations with closed eyes are most efficient, and give the child's activity most scope.

The child collects similar and dissimilar objects and judges of them, forms an opinion of them, and concludes, if sufficiently trained, the increasing instances of positive, comparative, and superlative: rough, rougher, roughest; hard, harder, hardest, which he has learnt to distinguish by the feeling of touch.

No less do the different appellations of surfaces afford an occasion for satisfactory and interesting activity; and my museum overflowed with all sorts of curiosities under the name of outsides or surfaces, such as peel, rind, skin, hide, bark, etc.

It was a favourite game to cover up objects with a towel in an unrecognisable shape, and, nevertheless, guess the object by acuteness and power of arriving at conclusions.

Experiments were also made in letting drop both light and heavy objects; the greater or more difficult divisibility of the objects occupied many a leisure hour.

*Similarity between the Woollen Ball and the Sphere is found in Form.*

*Dissimilarity* in colour: the ball is blue, the sphere the colour of wood. *Material* of these bodies: the ball is of wool,

the sphere of wood. *Surface*: the ball is rough, the sphere smooth. *Weight*: the ball is lighter than the sphere; I can pull the ball to pieces with my fingers; it has many holes. The sphere has no holes through which I could poke my finger. The ball sounds as light as a felt slipper, the sphere as loud as thunder.

## B. COMPARISON OF THE WOODEN SPHERE WITH THE CUBE.

*Retrospect.*—We have already above pointed out the advantage which results from the correct use of Froebel's seven gifts; the following comparisons are based on Froebel's three fundamental forms. With growing understanding the child should, from the commencement, be imbued with the conception that certain qualities are the properties of all things; whilst special characteristics determine the appearance and the name, the former of which are called the *common*, the latter the *special* qualities.

This promotes the power of distinction of concepts, which, as foundations of logical conclusions (as yet unconscious to the child) and of definitions, proves of very great value in later life.

*Common Qualities*:—*Form, Colour, Surface, Weight, Body, Power of Attraction.*

*Short indications for the development of word and idea as to surfaces, edges, corners, height, breadth, thickness, space, curved and straight lines.*

*Faces, edges, corners*:—Take both objects, give their names, and say what you see in them. Take them in your hand, shut your eyes, and describe what you feel. Turn round both in your hands, and describe the sensation produced. Seek objects which give the same sensation. Let your finger pass over the sphere, quite straight, what will happen?

Try to bring a beetle on the sphere, and let him run on it, what will the little beetle do? Put him on the cube, what happens? Why does he so often stretch out his little antennae? Is there no difference between the outside of the sphere and of the cube? describe it. How often do you feel something sharp in the cube if you pass your finger over it? Count these sharp points: what are they called? Show them on other objects. Are there parts between these sharp ends: how do these parts feel, compared with the sphere? How many parts lie between the sharp corners? How many corners do you see on each face? How many objects which are like the sphere and the cube?

*Height, Breadth, Thickness, Space, Curved and Straight Lines.*

Who once went up a mountain, and was heartily tired of it? What did you then say? or, when a bird flew right up on the

top of the roof. Look at the door, from the top to the bottom, what would you say if one were to ask you what you had measured with your eyes? If you go up on the roof by a ladder, would you say we are going deep down? Find objects in which no going up or taking measures can be done.\* All of you make a cube in clay, and bring three little sticks with you; these sticks will be put into the cube in three directions: they all come together in the middle, and it will be a great pleasure to notice the little tunnels which the three sticks will have made. I hope by then you yourselves will have found out what the directions are called which go from the centre to the right and to the left, to the front and to the back.

It will be a special pleasure to find out how the three directions are bordered in the cube.

Take the sphere and the cube and this tumbler as well in your hands: what happens? Take one object, and then another, and try to find out if one is in the other's way. Sit down in a chair beside your grandpapa. What happens? Who can pour two glasses of water into one glass? Who can put two feet into one shoe or two feet into one stocking? Try now to find if the sphere and the cube take up the same space. For this, put both on the table and a piece of paper both over and between, and see if there is much difference as to the space they take. Take a large piece of wadding so that it spreads far beyond your hand; press it together and try if you cannot squeeze in a second piece just as large: I think you will succeed. What do you observe with all things which you can see and feel? Who can make a sphere with both hands or with two fingers, and who can make a cube with his hands and fingers? In forming the square, what do you do with your fingers? Compare the placing of them in making a cube. Where can you see lines that are alike? Bring similar objects. Let us make a sphere and a cube in clay to compare. What will you avoid in making the one which you strive to make in the other? Do you see how to hold and guide the scissors when you cut out a circle and cut out a square like a cube? Try to draw the shapes we have just named on your slate. Throw the sphere and the cube on the ground; is the sound different from what it was with the woollen ball and the wooden sphere? Why?

*Similarity.*—In colour, material, surface, in sound and solidity.

*Dissimilarity.*—In shape: the sphere has one round surface; the cube has six flat faces. The sphere has neither corners

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\* The enthusiasm which the insight in the sudden consciousness of height as a common quality produces, is often really startling in little children: they set about measuring everything in their reach, and one has to be prepared for a whole inventory of all proportions of domestic objects.

nor edges; the cube has eight corners and twelve edges. In weight, though both are solid, both are not of equal size. The sphere is easily moved; the cube shows the contrary.

### C. COMPARISON OF THE CUBE OF WOOD WITH THE WOODEN CYLINDER.

*Retrospect.*—The distinct differences presenting themselves between the sphere and the cube are instructive as well as attractive to the child. The short directions given are quite inadequate if we consider the great variety of relations to life which can be both symbolically and actually deduced from these fundamental forms. The child must accordingly be early accustomed to recognise the connection of parts, in the simplest possible manner,\* either proceeding from the centre, or striving towards the centre, in symmetry regulated by laws, in order to be able to separate with facility the fundamental form or intermediate form from the whole form. The child, by this habit of clearly seeing and correctly describing—wherein one child corrects the other—receives a practical preparation for his future. Moreover, this higher development for feeling all things in unity raises him by a comparative æsthetic understanding and logical grasping of relations—which proceeding is of course in the child quite instinctive and unconscious—high above all that insipid extravagance of feeling, which has no other basis than to give expression, in current phrases, to a dim excitement of the senses.

*Common Qualities* :—Shape, colour, surface, weight, power of attraction, space, extension in three directions.

*Short indications for the development of words and ideas as to a flat face half-round and limited by edges, and of a fully-rounded one, and again as to a plain surface limited by edges, and as to the obstruction or speed which results from these surfaces when the bodies are in motion.*

The experience already obtained of the similarity and dissimilarity between the sphere and the cube, renders the recognition of the special qualities of the cylinder more easy.

“Take, dear child, the sphere, the cube, and this form in your hand, and hold them straight in front of you. What do you see? what do you feel? and what are the names of the three objects? Compare first the sphere and the cylinder in what you find alike in both, and what you find different. Then take

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\* I lay stress on that because I have proved its practical educational value. A habit which can easily be caused to be acquired by simple methodically seeing and exercising. Namely, one should let the six or seven year old child describe analytically or synthetically his conceptions of the forms of beauty and life in his individual and unfettered perception.

the cylinder and tell me whether you do not see similarities between it and the sphere, and, again, between it and the cube, and describe them. Do the same with the points of difference.

I wish you could again have found a little beetle ready to crawl round the three objects: How many times would he be interrupted with the sphere? how often with the cube? how often with the cylinder? Will he find the edges alike in the cube and in the cylinder? and if not, how can he distinguish them with his sense of touch?

You know that you have to do with an undivided round form, one divided by edges and corners into six faces, and one three-sided, partly rounded, limited by edges. Mention things which are like the cylinder.

Lay the sphere, the cylinder, and the cube straight in front of you. Then give all three, at the same time, a hard push to set them in motion. Examine the effect this will have exactly. Say what is the reason why one form should move the quickest?

Further, hang the sphere, the cube, and the cylinder up in suitable places, and see if their form shows a difference when you turn them; and when you are quite big you will still think of this merry game. One thing you can try at once: Develop the cube out of the sphere you have made of clay, and the cylinder out of the cube. Repeat this backwards, beginning with the cylinder. Pay attention to each change proceeding from it.

Make yourself three little boxes, each of the same shape, which will exactly hold the cube. After you have made a cube of clay which exactly fits in, weigh two other parts of clay exactly alike; make out of one of them a sphere, out of the other a cylinder, in order to place the three different forms by the side of the little boxes of the same size. Compare the empty space which remains over in the sphere-box with that remaining in the cylinder-box. You will find that in spite of the difference of shape and size, each of them possesses a height, a width, and a thickness."

The idea of similar contents with different appearance is thereby awakened in the little one, and can be easily directed towards that of the three fundamental forms. The results brought before me for years have surprised me. They may have their cause one time in the child's greater sharpness of senses; another time in the steady guidance to cause and effect; in the steadily comparative observation; and finally in the method depending on question and answer. They are the successful vehicles of Froebel's Method of Self-Development.

*Similarity* of colour, surface, sound, and material.

*Dissimilarity* in form, in number of flat faces, in the cube six faces of equal size, limited by corners and edges, in the



cylinder three rounded surfaces—two flat with rounded edges, whilst the third rounded surface surrounds the whole shape. The cube is immovable; the cylinder rolls quicker; but the sphere quicker than all.

Before we pass from the concrete observation of the three fundamental forms, we may be permitted to treat them as a family group, a mode of treatment which has been found excellent in teaching. This family group consisted of the second Gift, living together in one little box, which never made its appearance without causing a pleasant sensation even for the elder children. The family was always greeted with much joy. The difference between Mrs. Sphere and Mr. Cube, the graceful motions of the mother in opposition to the unwieldy angular appearance of the father, never missed its cheering effect. This effect was always increased by the rolling appearance of their son, Master Cylinder, who was an object of universal observation, because of the united qualities of both his father and mother appearing so distinctly and brilliantly; a view which was strengthened by the festivity of a family dancing-party, and their being made to turn by means of strings in hanging positions. No less drastic was the view of the filling of space, in which either the mother or the son were pushed aside and overthrown by the heavy father, especially when Miss Woolly Ball was on a visit to her sister, Mrs. Sphere.

Miss Fanny Schwedler, Principal of the Free Kindergarten Training School in Chicago, lets the children build with the second gift and the little sticks in addition, and very fine life-like shapes are formed by means of them. Further, we may add that the sand-table is a splendid means for youthful experiences and experiments.

Everything can be made visible on it—the longest as well as the shortest paths; the high hill and the deep dale. All softly curved, all sharp mathematical lines, come into view on the sand-table in gracefully laid-out gardens. The knowledge of home, geographical sketches (even as far as the snow-line and the breaking of the wind by mountain chains), climatic scenes, *e.g.*, views of Greenland and South America, windings of rivers—all these things and many others can be executed by means of the various materials at hand in the Kindergarten. Scissors, hammer, knife, modelling, card-board, paper cutting—all that incites the child's creative ideas comes into application. Charming groups of animals (family groups), which one has of domestic animals, little stones, seeds, in short, all sorts of things are to be carefully used and carefully put back in their places. Have your own chest of drawers with boxes, which are kept in order by the "Shepherd," the "Gardener," or the "Architect," etc. In this co-operation the necessary preparation is realised

for future social and political co-operation for an idea. For this reason, in my Institution each Friday, all classes united in common studies and common work.

## SECOND OBJECT-CIRCLE.

**DIAGRAM I.**—*Comparative views between the solid bodies of the three fundamental forms, and their actual representation in lines.*

### A. THE SPHERE PICTORIALLY REPRESENTED.

*Retrospect.*—The child has learnt by looking at corners or final points, which he has observed by means of rings, stones, and sticks, that the continuation of these points is called a line, and that without the meeting of two lines he can expect no corner. He has noticed this best with a square of paper, and the child can easily be led to observe the stretching out into a straight line by means of a series of dots. He has learnt that a line drawn in this manner round the sphere without any interruption returns to its beginning, whilst in the cube its travelling round is interrupted six times. He has found by experience that the slightest deviations in the noticed proportions of a square and of a cube would destroy the identity of form of either, and so has received an idea of limitation of space according to given laws.

*Remarks about the Difference between a Tangible Body and its Pictorial Appearance, by means of Lines.*

We learnt and understood that an object which can be seen and felt is a body, and that each body is composed of small divisible parts, that this division may be made more difficult or lighter as the parts, which are governed by certain laws of conditions, are divided nearer or further from each other. We further learnt that each body, bordered and confined by its outer side (often called rind, peel, skin, etc.) or surface, takes a determined form of its own, and also has its appointed colour; further, that according as the small parts of each body are more or less compressed, it exercises a greater or less pressure, which is called weight or solidity; further, that the heavier and more solid a body is, the more strongly is it attracted to our earth. But this you have all learnt by means of objects which you could directly hold in your hands. Now, you see the same objects under quite different circumstances, namely, in a picture.

The sphere, which you may once more touch, you can grasp and turn. It is of wood, whilst the same appearance on the diagram only consists of lines of darker and lighter strokes on

paper; you will easily be able to notice that these strokes are fitted to the rounded shape, although they are so short that you could hardly distinguish them separately: all the same, they are able to make you believe that the picture is a sphere, just ready to roll away. To bring this about by such small means, *i.e.*, only with little strokes, is an art; it is called modelling and shading, and it is that which gives the otherwise flat white circle, not only the already-mentioned rounded shape and life-like appearance, but also brings into view how the light and shade surrounding the sphere fall upon it.

In a few years you yourself will, I hope, be able to enjoy the pleasure of shading; and it would even be wrong to attempt it without sufficient directions.\*

Self-education is the essence of Froebel's Method. Energy of will to do, the clear taking up of a fixed aim, and the development of the necessary moral effort to reach this aim, are the moral guiding principles which, in those who do not by their actions raise them to the position of their chief principles, exclude any claim to represent Froebel's Method. It is not Froebel's view, which is of value for each and every time; but it is the way of understanding his view which has retarded the growth of the Froebel System of Development.

Thus, America not only rejects the early entrance into training schools for Kindergarten teachers, but only allows it when preceded by training as a school-teacher. It follows herein the example of Belgium, and, as far as remembered, of Austria.

Make objects out of clay and in paper, which, in endless transformations, keep the fundamental form steadily in view. Give a free individual description of similarity and dissimilarity between the tangible sphere and its representation. Refer to its size, to the mode in which either of the two is made, to its use, and count up the objects which have a spherical form. Try to draw a sphere; you will find that if you make a dot in the middle of the slate, the curved line must always remain the same distance from this centre. That is not easy.

## B. THE CUBE PICTORIALLY REPRESENTED.

*Retrospect.*—The blind man, having become able to use his sight for the first time, can for awhile not do without the sense

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\* Scholars in my Institution have already tried to practise it in their seventh year to their great delight. Here I wish again decidedly to guard against the erroneous idea that Froebel's free unforced method of development would produce a playful, trifling mind, which would not wish for any exertion, such as is necessary for strengthening the will and for overcoming difficulties. Never has a greater mistake existed.

of touch. We now intend to let the child see and distinguish without the aid of touch.

With the advancing understanding of the tangible form of the cube and its qualities, the province of experience for the child would be pretty well exhausted, if there were not finally to be considered the clear comprehension of the lines, their relation to one another, and their names.

*Indications about the common Relations of Lines one to another, and statement of the places in which they unite in the Cube.*

“What do you see in the cube which you could copy on your slates? Which are the two kinds of lines that you observe? Name them, and state in which directions they can be extended. Try to copy the front side of the cube; how many lines appear of each of the two stated kinds? What do we call the point where two lines of opposite directions meet? Take a tangible cube (made by yourself) and compare it with the one drawn, and give your opinion why you think certain parts of it appear changed. Seek: the number of lines you see, where they meet and how they meet, and which names therefore the faces and the points or corners must have, that are formed by them: e.g., the right hand upper front corner, or the left lower back corner; or, with the lines, the upper front line, or the under back line. If a point lies between two lines so that its distance from the end is quite equal, what does this point indicate? How many such points can you count up in a cube?

Indicate in the schoolroom and in buildings the lines which were found in the cube. Divide them into metres and centimetres, whole parts into halves, quarters, and thirds, and use for that strips of paper.”

These exercises, as they develop a power of concentration, are excellent, especially for a good free mode of expression.

“Give a free individual description of the cube before you, which, if not satisfactory, can be criticised by your neighbour.” (If the child can write let him put it on his slate.)

### C. THE CYLINDER PICTORIALY REPRESENTED.

*Retrospect.*—The comparison of the cylinder with the sphere and with the cube, and their connection, has certainly been clearly understood, and the impression needs only to be strengthened by becoming familiar with the lines.

*Questions and directions for the curved line of the cylinder as circle.*

“The word circle or ring is known by each of you children. In which of the three fundamental forms is the circle visible? Draw all three fundamental forms and divide them horizontally;

compare their difference. Will such a circle produce, at one and the same time, both the shape of a sphere and of a circle?"

"This again should lead you to observe, exactly and carefully, the pictorial representation of the sphere and the cylinder. Consider what diligence and exactness was necessary to represent all these forms by other means than quite small dot-like strokes and lines."

#### D. THE SPHERE DIVIDED.

1, Hemisphere; 2, Quadrants; 3, Zones; 4, Segments; 5, Peripherically; 6, In Rings; 7, Oval.

This division brings with it six separate parts, each of which has a different shape, and all of which more closely coincide with forms of nature. This close relation to Nature and art decided me to bring it to the child's view, whilst he is yet in the stage of vivid power of conception by his senses of all he sees and feels. Let no one say these early impressions are lost.

They are not lost if the child bears them in his memory untrammelled in his own individuality, like the first delight of spring, the first odour of blossoms, the first warbling of birds, or when, after many years, he suddenly becomes conscious of the fact that the notion, derived of the shape of the sphere, of variety in unity and its symbolic relation to life, especially to plant-life, has furnished, unconsciously, the basis on which stands the superstructure of his understanding of the phenomena of life.

They are not lost when he becomes conscious that the great coming and going in nature, the great laws of mutuality and permutation of matter, the tendency to unity in its religious and social value fell as the first germ into his young soul connecting similarity with dissimilarity.

They are not lost when he becomes conscious that that which was, is, and will be, as the great question of existence rising and fertilizing, was connected with his earliest nature-viewing development.

They are not lost when he becomes conscious that these very first impressions of nature were not to him as a dead book of learning, but as his best living ennobling friend, who raised up for him playmates and life-inspiring companions out of the early-seen blossoms and leaves, the fields and woods, the brooks and rivers, whose speech and breath never could be oppressed by the weight of dead figures and dates.

It is the beauty of nature, as well as the poetry of the child's first conception of life and the early understanding of fixed and recognised forms, which must work harmoniously together into one sound, before we can dare declare that we have brought forward the awakening of the inner wealth of soul of a human

being. Not by means of words but by true and warmly-felt seeing.

1. *The Sphere divided into two Hemi-Spheres.*

After the necessary previous knowledge has been given, the further developing teaching by questions would suffice.

*Remarks about the relation of parts to plant-life.*

Questions and directions:—"In what manner does the form you are now looking at differ from the undivided sphere?"

"Indicate the direction in which it is divided?"

"Can the direction be changed without altering form and number?"

"How many parts have been produced?"

"What is their connection to the whole?"

"How many straight faces, how many arched surfaces are visible?"

"Show the division in a soft sphere of clay."

"How is the form of the circle brought into view?"

"Name and bring forward objects of the same form from life, art, and nature. Hold the hemisphere with the round part towards the bottom, compare it with the calyx of flowers, buds of flowers, and seed capsules. Look at the sunflower and its family. Make out of clay, paper, and other materials, objects which have the shape of a hemisphere or similar shapes."

2. *The Sphere twice divided into four quadrants. Comparison between the hemispheres and the quadrants.*

Questions and directions:—"What is the difference between the two forms?"

"What brought about the difference?"

"Show the division in a soft sphere of clay."

"How many quadrants are there in a hemisphere?"

"What part of the whole is, then, a quadrant?"

"In what connection do form, size, and space stand to each other in these parts?"

"How many flat faces, how many rounded faces are visible?"

"Bring forward and make objects of similar and different shapes, taken from life, art, or nature."

"Compare the form of the quadrant with seed-capsules of certain nuts, the cores within apples, with berries, cucumbers, marrows and pumpkins, melons, and many other vegetables."

3. *The Sphere, divided three times, into four zones. Comparison between the four quadrants and the four zones.*

Questions and directions:—"How is the form of the quadrant different to that of the zone?"

- "What brought about this difference?
- "Are all these parts of the same size?
- "Show the division in a soft sphere of clay.
- "How do three divisions produce four parts?
- "How many of the zones are visible in a quadrant?
- "What might you therefore call this division?
- "In what connection do form, size, and occupation of space stand to each other in these parts?
- "Which form takes up the greatest superficial space?
- "Which form requires the greatest height of space?
- "Try to make out of the four zones four quadrants, and out of the four quadrants four zones?
- "Make such objects of clay and of paper which may be made from the shape of the zone, and in connection with the quadrant. Take them from life, art, or nature.
- "Name and show objects of which you think when looking at the zone.
- "Compare the form of the zone with petals of flowers, leaves, slices of fruit, stems of trees, roots, twigs, the receptacle, the flowers, etc."

4. *The Sphere twice divided into four segments. Comparison between the four zones and the four segments.*

Questions and directions:—"What is the difference in appearance between the four zones and the four segments?

- "What brought about the difference?
- "Show the division in a soft sphere of clay.
- "How do four parts result from two divisions?
- "How many segments go to a quadrant?
- "What part of the whole is one of the segments?
- "In what relation do, in these divisions, form, size, and occupation of space stand to one another?
- "Which form occupies the largest surface, the highest space?
- "Compare the form of the quadrant with the segment.
- "How many straight faces are visible, how many rounded surfaces?
- "Make such objects in clay, paper, and any other material you like, which represent the shape of the segment, from life, art, and nature.
- "Bring and name such objects of which the form reminds you.
- "Notice this endlessly repeated form in art and especially in nature, in the divisions of blossoms, of fruits, of berries, the shapes of leaves, their calyx-like position in all divided and bell-like flowers. Find that form in the orange, in the poppy, and in a hundred other objects, which you must hunt for yourselves."

5. *The sphere twice divided peripherically. Comparison between the segments and the peripheral divisions of the spheres.*

Although with this division a form is brought forward which perhaps rather unfrequently meets the eye, yet the form, so to say, affording shelter and roof, is a very interesting one.

It is found in a thousand applications, and can be made intelligible to the child as the form of keeping, protecting, nourishing, and granting.

The form must be conceived as concave and convex, and be made plain by objects of similar kinds.

Questions and directions:—"How does the form you are observing differ from the division of the segments?"

"What brought about this difference?"

"Show the division in a soft sphere of clay."

"Describe the differences of the forms."

"If the divisions were to be carried still further in the manner shown, what would be the consequence?"

"How many faces has the form?"

"Of what kind are the faces? The point is to discriminate between concave, convex, and flat faces."

"How many parts do you see in the peripheral division?"

"Are they of the same size?"

"Make such objects in clay, paper, or other material, which are like the form of peripheral division, and which are taken from art, life, or nature. Name and bring such objects as you are reminded of by the form."

"Observe and compare this form with forms of nature. Pay special attention to the form and division of the seed-capsules, to the corolla of flowers and their calyxes."

6. *The sphere three times divided into rings. Comparison between peripheral division of the sphere and four open rings.*

In the ring form, which connects itself with the zones already noticed, we recognise at the same time the circumference of the oval which is found in the sphere.

We have already occupied ourselves in developing the cube from the sphere and the cylinder from the cube, and hope a clear insight in the different ways in which bodies occupy space has been acquired. Nevertheless, it seemed necessary to complete this impression by the actual view given in the diagrams. The oval, the form of all growth and life, is one of the forms which meets the child's experience in endless variety. It should, therefore, please him in its symbolic and its beautiful meaning, that is, its fine, somewhat pointed, harmoniously widening and narrowing lines.



Questions and directions:—"How does the form of the rings differ from the peripheral division?"

"What brought about this difference?"

"Show the manner of division in a soft clay sphere."

"Describe the difference of these forms."

"Are the ring-parts of equal size? Why not?"

"In what connection do form, size, and occupation of space stand to one another in these parts?"

"Why can the parts not have equal weight, although they occupy more space?"

"Can one say each ring-part is the fourth part of a sphere? Why not?"

"Make such objects in clay, paper, or other material, which are like the ring-shape, in art, life, and nature."

"Name some objects of which the form reminds you."

"Observe the shape of the ring in nature. This is endless. Each little vein that you see in a leaf is a ring-like tube. The inner construction of the stems, the twigs, if you open either, is like a ring. You must not omit to look for this in spring-time, especially in willow-wood. My pupils always took a magnifying glass in their hands. Cut through the stem or the stalk of an onion or a tulip. You will find that there are whole families which stand on hollow feet. Only *look* for the little rings and tubes in beautiful nature, you will find them everywhere."

7. *The oval held in rings, showing its derivation from the sphere. Comparison between the open rings and the oval.*

The reasons have already been given why it appears desirable to observe the oval as derived from the sphere. With this form the series of round shapes, as far as suited to the young child's mind, seems to be brought to a conclusion.

The teacher has here a multitude of occasions to gently stimulate the mind of the child. Nothing affords the child more joyful emotions than the knowledge of cause and effect.

The teacher of our age, who has to be likewise an educator, has to make use of this.

Questions and directions:—"What is the difference in form between the ring and the oval?"

"On viewing this form, how do you think it was developed?"

"Illustrate this by either placing the oval, as in the diagram, into the rings; or by making a sphere, dividing it, and placing an oval in the hollow made for it, on which the other half, likewise hollowed out, fits; or by simply lengthening the sphere."

"With what can you compare the spaces on which the sphere and the oval rest? (Let the child indicate on a square and on an oval piece of paper both the forms.)"

"Describe the difference of the forms.

"How many flat faces or arched faces have the rings?

How many has the egg?

"Is the oval a part of the whole, like the ring?

"Why does the ring remain in its place, while the egg rolls?

"Compare the egg with the sphere.

"Make oval objects in clay, paper, and other suitable material, taken from art, life and nature.

"Name and bring such objects of which the oval reminds you.

"Notice this lovely form in Nature, repeated in a thousand ways. Think of the thousands of different eggs of birds, insects, of flowers (the seed is nothing but the egg of the plant, which, like the bird's egg, contains the germ of a new life). Compare the beautiful, oval hanging blossoms, the upright calyx, the buds, the leaves, indeed all that you can see in your school-gardens, your own gardens, your flower-pots, and bunches of flowers. Do not forget the numberless different berries, fruits and vegetables. Look at them, love them and honour them as a gift, made for your pleasure and use, and thank *Him*, with all your heart, who has given you this as a rich treasure for the growth and ennobling of your soul, for you yourself could not even make a single little leaf."

### THIRD OBJECT-CIRCLE.

DIAGRAM II., in four divisions. A, *Three primary colours.*

B, *Primary colours mixed or secondary colours.* C, *Secondary colours.* D, *Secondary colours mixed or tertiary colours.*

*Retrospect.*—It has been pointed out, from the commencement, that the use of the diagrams may have a twofold educational aim. Firstly, the special culture of the senses as such, as they are day by day more required for each calling and all scientific culture. Secondly, culture in general through the senses.

Although, for many years, a universal work like Goethe's "Theory of Colours" has lain before us, it must yet be confessed that the practical educational question, from the above standpoint, is only of recent date. The far-reaching comparative observations of man and animals in general, of civilised and uncivilised people, of invalids and healthy persons, have led Tyndall to say, that the theory of evolution, being once accepted, a great number of till then undreamt of treasures must in times to come fall to man's power of vision. Virchow recommended the culture of the knowledge of colour in schools, to the consideration of the Reichstag. This is supported by

Magnus' statement that in consequence of their earlier and more varied training colour-blindness is more seldom found in women than in men, and his statement is strengthened by the declaration of the American Kindergartens, that colour-blindness is hardly ever to be found in young children.

From what has been said, it follows that the child requires a comparative insight of colours in order to recognise and distinguish them. From this insight springs the necessary comprehension of mixture, shading, blending, and finally, the knowledge of the names of colours and their harmonious connection.

All this is intended to prepare the clear understanding of everything in a period of life, in which not only is the receptivity of the senses greatest, but when the necessary time for practical exercises can be best afforded.

Besides this practical view, it is the ethical and æsthetical development by means of colours, which requires comparative viewing. The comprehension of the mute language of all things which shows itself, without knowledge of the words, in the wonderful gift of the young child by not only recognizing the nature of objects in their most delicate distinctions, but again without words, makes this distinction felt to those surrounding him, explains the child's early original gift of grasping and forming. Every forcible interference with this in-born power, leads to the annihilation of his original creative power, and is the reason why a late development of speech in the child, instead of being regretted, should be encouraged.

Hand in hand with the duty of not destroying this originality goes the educational culture of the power of an individual perception of this dumb language. Form and colour are two of its richest representatives. They develop equally the thinker and the poet, the happy man and him who confers happiness, and the indestructible wealth of a deep ethical and æsthetical life of emotion and the latter's true vassals, imagination and the power of shape.

This wealth of feeling has shown its influence on all nations and in all times, when the observation of nature is directly brought about by its forms and colours, by those languages and art creations rich in form and beauty, which have remained to us in the masterpieces of the Greeks, Romans, and old Teutonic races.

Incapable as we are of producing these favourably procreative circumstances in the present days, there only remains to us the possibility of cultivating the bodily eye for a higher mental receptivity.

The child on its mother's arm gradually, as the mother tends the opening flower, recognises the beauty of its form and colour ;

the comprehension of the single tone gradually leads to the comprehension of the full chord, the recognition of single colours leads to the recognition of shades and their harmonious connections: thus, step by step, the capacity of comprehending nature in its beauty and with its treasures, is developed.

These immeasurable treasures, which mother earth keeps for the inner seer; treasures which, in a thousand flames, in a thousand colours, lie before us, and are not seen; which in numberless tones sound in our ears and are not heard, except by the consecrated priests of the art, who let them ring out in the charms of word, tone and colour, while all should be made capable in priestly minds, to enter nature's door, held open for us, as recipients, and in its mute language to understand the great educational truths of life, which, once known, will exercise its ennobling ethical and æsthetical effect.

*Short indications upon the view of size, of planes and of rounded bodies, position of circles, and the comprehension of primary and mixed colours.*

It has already been said that the knowledge of the circle must be connected with the practise of making it. This is brought forward still more strongly by the use of Diagram II., as the child is shown how to connect the imitation with the aspect of the object observed.

This was not required by looking at Diagram I., because in the first instance it extended beyond the child's capacity, and further, because our aim was by means of continuous repetition of one form, to let what might be called a normal point of view, sink into the mind of the child, and thus to counteract possible bewilderment by the subsequent multiplicity of variations.\*

The remark that the circle is more difficult to construct than the putting together of straight lines, may be met by the fact, that the making the circle rests on a quite different basis, which moreover has nothing to do with an aimless mechanical exercise.

As already has been said at the commencement, the completion of the round form, especially if practised on a black-board with both hands at the same time, is a most practical one, which rises in value by our giving the child the great pleasure of continuing these circle drawings by either letting it extend the radius from the centre in certain fixed spaces as far as the edge, or proceeding from the edge and narrowing to the centre. The outer circle proceeds from the drawing of certain appropriate forms, and must naturally be practised so long on the slate, till the child, ripened by single

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\* I have the most striking proofs of the practicability of this system.

completion on paper with pencil, finally is allowed the methodical use of a drawing book; which, at the same time, opens and furthers the series of inventions which render the child happy; providing that the form is understood in its characteristics, and that the power has been awakened to make artistic use of these characteristics by harmonious compositions and animation by colour.

Directions for this are given on the enclosed plates.

*Comparison between Diagram I. D and Diagram II. A.*

As all these objects now about to be compared have already been known, questions would seem sufficient.

Questions and directions:—"What are the differences in size between the forms you see on Diagram I. D and Diagram II. A?"

"Give the exact measurements both of the whole and of parts.

"Are all the parts like spheres or circles?"

"Whereby is this determined?"

"Which kind is the most difficult to make? and why?"

"Show objects which are like the arched sphere and flat circle.

"What is the arrangement of parts on Diagram I. D and II. A?"

"What position is comparatively occupied?"

"Measure exactly what distance from the centre and again reckoning from the sides, lies between the forms on Diagram I. D and Diagram II. A.

"How can you distinguish the positions?"

"Give the names of the colours both singly and as a group of colours.

"How was the group formed?"

"Draw and colour the plate exactly and bring objects of the same colour."

It is quite left to the teacher whether the pupils are to copy the coloured diagram in their drawing-books in its natural size or diminished, and colour their work either with Conté's pencils, crayons or water-colours. One thing, however, is important, and that is that the children are to make their own diagrams (large or small). It is a capital means of spurring on the children.

*Comparison between Diagram II. A and Diagram II. B.*

*Retrospect.*—We cannot intend, where there is only question of the æsthetical comprehension of colour, to treat it otherwise than from the simplest standpoint, suitable to the child.

To speak of three primary colours instead of four is therefore permissible for more than one reason. For one thing, it connects itself with the already familiar idea of three fundamental forms; on the other hand, the three-fold increase in the multiplying the colours, proves itself as most suitable.

Less easy it appears to determine the names of the increased multiplication. The actual "mixture" suggests certainly the name, mixed colours, while the words, primary, secondary, colour, &c., are a customary expression.

*Short remarks about the secondary colours proceeding from the mixture of the three primary colours.*

After the pupil has once placed together the three circles on the previous diagrams, it cannot be difficult for him to lay them one over the other in the measure required, and for this the use of the compasses, which my pupils availed themselves with much joy, is very practicable.

It requires great attention that the primary colours, which in Conté's pencils are particularly good, shall be carried out in clear, warm shades of colour, as on the cards, the following water-colours are suitable: carmine-lake, Prussian-blue, and light chrome yellow.

Similarity of both the plates as to form of the objects, their colour, their number and position.

Dissimilarity in form, colours, number, and position.

Questions and directions:—"What are the parts of the forms called which arise from putting the circles one over the other?"

"What might we call the parts which lie between the circles?"

"Give the names of the colours, both singly and as a group of colours.

"How was the group formed? and what is the number of the parts of the group?"

"Draw and colour the plate exactly, and bring objects of the same colour.

*Comparison between Diagram II. B and Diagram II. C.*

*Similarity of both the diagrams in the form of the objects, their colours, number and position.*

*Dissimilarity in form, colours, number and position.*

Questions and directions:—"Does this card contain anything new either in form, colour, or position of the forms?"

"State from which diagram the size and place of the forms is taken, and from which the colours?"

"Give the names of the colours singly and as a group.

“How was the group formed, and what is the number of its parts?”

“Draw and colour the plate and bring objects of similar colour?”

*Comparison between Diagram II. C and Diagram II. D.*

*Similarity of both diagrams in form, colour, number and position of the object.*

*Dissimilarity in form, colour, number and position.*

Questions and directions:—“Give the names of the colours, both singly and as a group.

“How was the group formed, and what is the number of its parts?”

“Draw and colour the plate exactly, and bring objects of similar colour.”

#### FOURTH OBJECT-CIRCLE.

DIAGRAM III., in four divisions. A, *Shading of colours.* B, *Analysis of colours.* C, *Blending of colours.* D, *Complementary and antique colours.*

#### DIAGRAM III. A, *Shading of colours.*

*Retrospect.*—After the pupil has learnt, by practice, the mixture of colours, it becomes necessary to bring before him an increase in the aspect of colours without excluding practical exercises. The culture of the eye for the hand requires no less the culture of the hand in order to follow the orders of the eye. A light, well-practised hand is the chief requirement for the use of the pencil as of the brush.

The following is to serve to fulfil this requirement. In order to bring about the single shade observed in Diagram A, one should give the pupil only one pencil or one colour, and demand that the ascending or descending shading shall become a co-operative activity of eye and hand.\*

Questions and directions:—“Give the name of the exercise before you.

“How can the form be characterised as a whole?”

“Of how many parts does the whole consist?”

“How are these parts arranged?”

“In what proportion do they stand one to the other?”

“How many different sizes are before us? How many of each size?”

“How many kinds of forms are visible?”

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\* It is left to the teacher's judgment whether the mixture of white is to be allowed.

"Give the names of the colours. In what relation do they stand to each other?"

"Name the diagrams on which you saw the same colours."

"State which colours were necessary to produce the mixed colours."

"Draw and colour the whole form."

"Make use, if possible, of the compasses."

"What does the mixture of white or black with another colour produce?"

### *Diagram III. B. Analysis of Colours.*

*Retrospect* :—While in the preceding diagram the darkening and lightening of the colour called forth a comparative view, in this one that analytical distinction in the mixture of two colours is brought into practice, a distinction which Virchow so earnestly laid stress on in the Prussian diet as to its importance for general culture and especially technical education.

Diagram B brings forward four black and four grey round forms, each of which shows a light mixture with the principal colour. To be able to recognise this mixture in the principal colour is our aim in this exercise. It can be done in a very attractive manner by letting the pupils' compositions of colour be exchanged and judged one by the other. The inner ring of the form, the spectrum, in which each child will at once recognise the rainbow and its scale of colours, shows very clearly the mixture and its transitions. The child will at once perceive that red, yellow, and blue are the fundamental or chief colours, which, standing by themselves have nothing in common, but when yellow lies in their midst, influenced by, or mixed with red on the one side and blue on the other, certain transitions of colour take place, which change the original three chief colours into three groups, into "principal" and "three secondary colours," and these lead by passing over of 'one principal colour to a secondary colour, and again from this latter to a principal colour.

Thus—

|          |             |                                                            |
|----------|-------------|------------------------------------------------------------|
| "Red"    | leads to :— | red-orange, orange-red, orange-red-orange.                 |
| "Orange" | „           | orange-yellow-orange, yellow-orange, yellow-orange-yellow. |
| "Yellow" | „           | yellow-green-yellow, blue-green, blue-green-blue.          |
| "Green"  | „           | green-blue-green, blue-green, blue-green-blue.             |
| "Blue"   | „           | blue-violet-blue, blue-violet, violet-blue-violet.         |
| "Violet" | „           | violet-red-violet, red-violet, red-violet-red.             |



Distinctions practised in this manner are of the greatest use for the power of seeing, and should be greatly used.

Questions and directions:—"Give the name of the exercise before you. How can the form be indicated as a whole?

"Of how many parts does the whole consist?

"How are the parts arranged?

"In what proportion do they stand to one another?

"How many kinds of forms are visible, what are they called?

"Give the names of the principal or fundamental colours, and the group of colours resulting from their mixture.

"How many colours do you count in each group?

"Read these off from the diagram of colours which you have made yourselves.

"What is the arrangement of colours called that is visible in the centre of the diagram? What does it remind you of?

"Draw and colour the whole form. Use compasses."

### DIAGRAM C. *Blending of Colours.*

*Retrospect.*—It seems allowable, after we have given the study of colours our attention, in the last two diagrams, to indulge in a purely æsthetical enjoyment.

Although certain principles are accepted for the harmony of colours, it is not to be denied that with the mixtures freshly appearing each year, new combinations of colours arise. Diagram C shows the rise of such new colours, and observes that a primary colour, mixed with a mixed or secondary colour, produces a third, neutral colour. The search for such new colours will afford each child great pleasure. The practice of colouring which proceeds, like rays from the centre, is calculated to give the necessary preparatory practice for the later colouring and shading of flowers, fruits and leaves.

Questions and directions:—"Give the names of the exercise before you.

"How can the form be called, as a whole?

"Of how many parts does the whole consist?

"How are these parts arranged?

"In what proportion do they stand to one another?

"How many kinds of forms are visible? What are they called?

"Name the colours which, mixed together, produced the third, neutral colour.

"Draw and colour the whole form, be very careful to exactly imitate the delicate tints running one into another. Use the compasses."

*Diagram D. Complementary and Antique Colours.*

*Retrospect.*—The colours on these cards afford me a special pleasure, because they tell of a time in which art was so honored, that the masters distinguished their favourite pupils by letting them prepare their paints for them. I love the fulness and repose of those colours as the after-glow of past ages. Here are mirrored the luxurious colours of Pompeii and Herculaneum, the colours of the Nile, the gold of the Nibelungen, the purple of the Romans, the sacred verdure of the old bards' groves, the terra-cotta of the Greek vases, and it seemed as if by these colours the later comprehension of these treasures would be prepared. Their connection one to another is harmonious; it seems as if they all belonged to one noble family tree. The parental connection, or complementary connection, is visible in three directions: one to right and left of each and one to the centre. This, however, does not by any means exclude a change or partial transposition of the colours. They are all tertiary mixed colours, which cannot be obtained but by the blending of several colours. To ask the pupil to find and imitate these shall be our farewell exhortation, with which we close the preceding observations of Form and Colour.

**FIFTH OBJECT-CIRCLE.**

*Two plates, here attached, containing the outlines of forty-eight forms of beauty.*

These outlines, with the exception of a few forms of direction, show inventions of my pupils. The names and the ages of the children are shown. The size of the drawings is considerably reduced, it varies from eight to twelve centimetres. They are divided into seven series, which connect themselves methodically with the divisions of the sphere observed on Diagram I. D, and with regard to the colouring, keep pace with the colour cards.

It has already been pointed out that the parts of the sphere divided, which were viewed on Diagram I. D, should be traced round with a pencil. The objection that this is only to be regarded as an exercise in mechanical dexterity, I wish to meet by asking the reader to look with attention at the simple st figure produced by a child of five or six years, when it will at once become clear that in the first instance the placing together of the parts bears witness to a mental activity, and that, further, the symmetrical arrangement, measured by the eye—which was never allowed a mechanical aid—must surely be considered worthy of acknowledgment, especially if it can be stated with a clear conscience that the divisions in series No. 16, 17, and 18, Hemisphere “divided from the centre,” were executed by

children six years old, and exclusively by measuring with the eye.

Although it is desirable that the patterns given in these Series should be used, the teacher must exercise his own discretion. I felt it a want to introduce them as children's work from five and a half to ten and a half years, as the proof of the possibility of bringing into view an early-developed enthusiasm for Beauty and Regularity.

*Short directions for the use of the figures on the two plates here attached.*

Figures 1 and 2 are leading forms. No. 1 represents the circle, as already discussed, which should be executed by means of a spiral line either from the centre to the edge or from the edge to the centre. No. 2 points out the necessary explanations of relative size. Let these figures be enlarged. Divide each one singly into its chief and lesser parts, and compare these with the parts of forms given on Diagram I D. A further increased exertion presents two different figures, leading the child to compare them analytically, and produce a third new figure combining the qualities of the two first. These exercises, which encourage the power of thinking and comparing, are much to be recommended. Hoping that these directions may be sufficient to serve for the whole of these series, it may still be added that the title-page of the portfolio also contains inventions of the pupils.\*

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\* Froebel's Method influences in America, not only the public schools, in so far as the Kindergartens are connected with them, but N. W. Hailman, W. Francis Parker, and Dr. Felix Adler, connect Froebel's Method with the State Educational Institutions, with which they are connected, from the lowest class of the Elementary School to the teachers' Normal School. The authoress based her Elementary Schools in Washington as well as in California, on Froebel's developing method.

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Foot-Note.—London, August 8th. Hence the distinguished and large firm of Otto Spamer, at Leipzig, has undertaken the German edition of the "Motherplays and Diagrams of Form and Colours." It is also ready to publish the completion of "Childhood's Poetry and Studies in the life, Colours and Forms of Nature, for instruction in Botany by Coloured Charts and Drawings." High esteem has been awarded to the recent German edition by several Educational Authorities. This is proved by their free offer to explain the method therein laid open by lectures before the Pedagogical, "The Handfertigkeiten" (Manual Training Schools) and "Volksbildungs" (Public Education), Teachers' Associations. Dr. Paul Wislicenius, Dr. Franz Hertel, and von Clauson-Kaas may be mentioned in this case.

Arrangements are pending with several large firms to take the agency in London, while the most prominent Kindergarten Trainers in Germany and England give their highest approval to the early introduction of Form, Colour, and the Curve, as given in the above.

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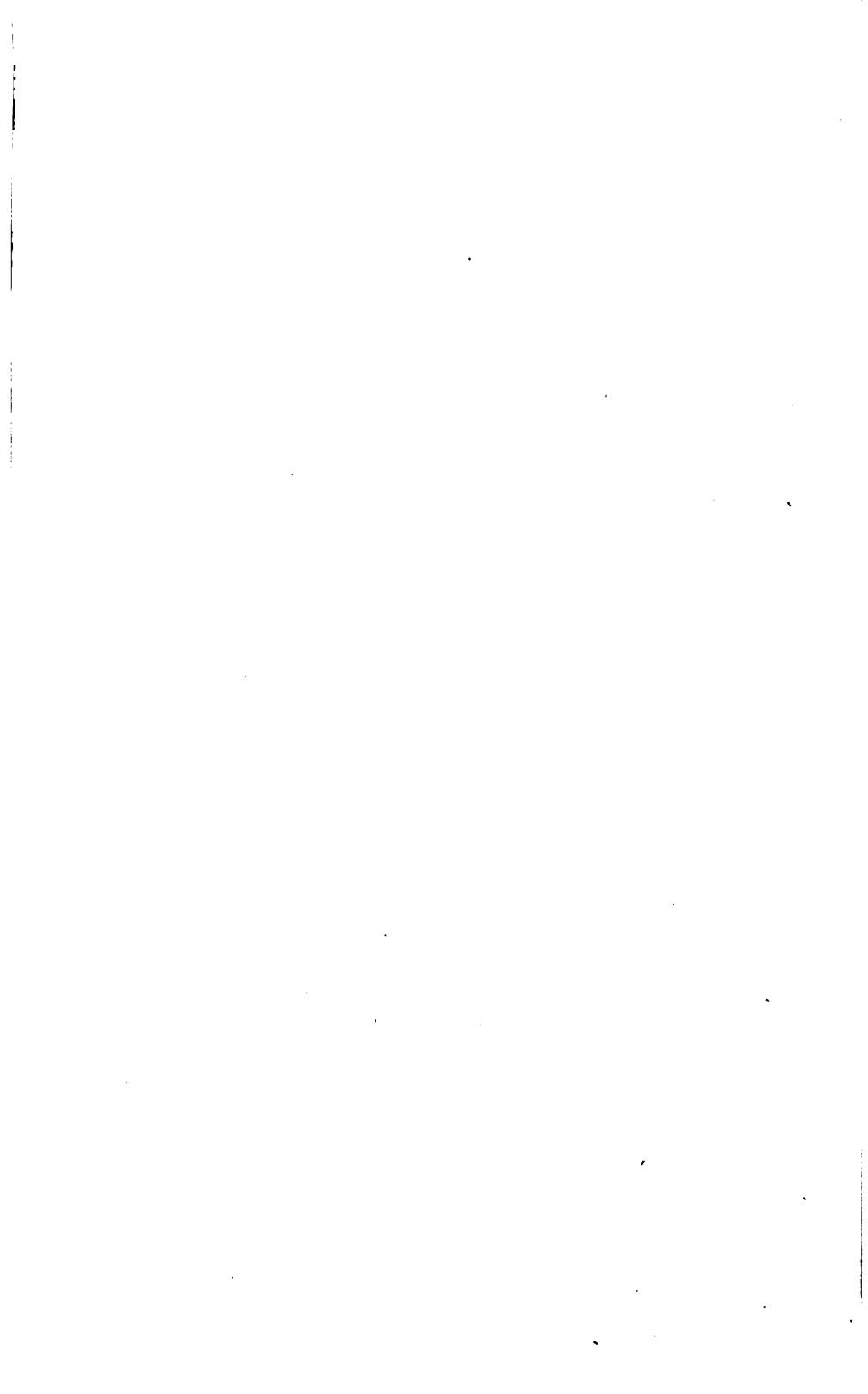
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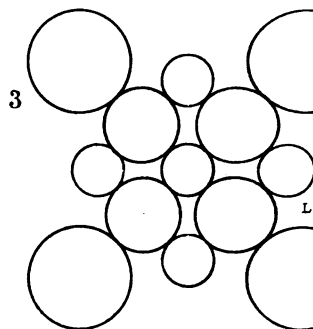
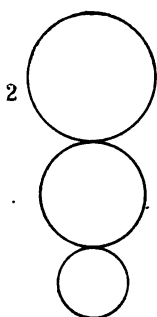
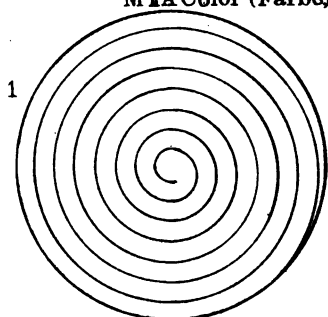
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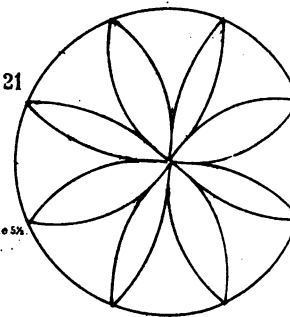
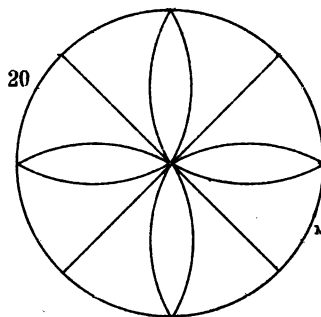
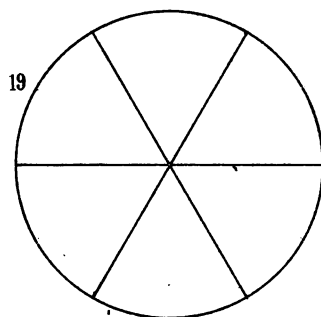
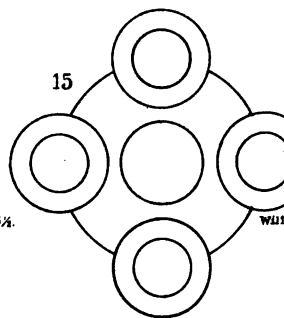
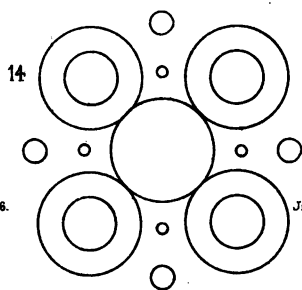
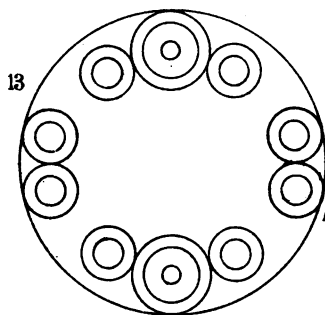
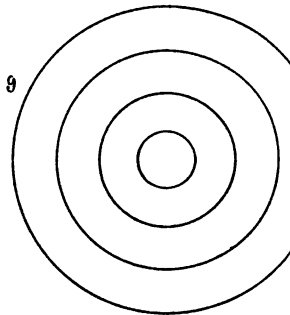
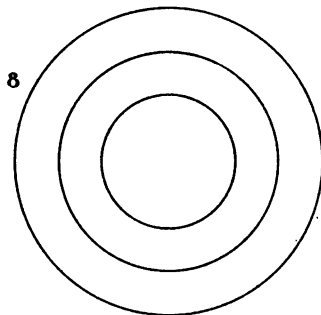
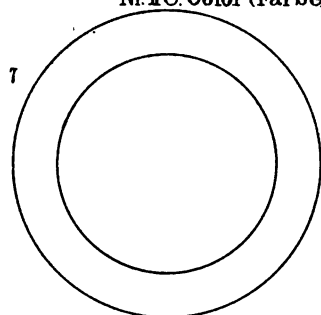




Series a. Nr. ID.1. Hemisphere.  
Nr. 1A Color (Farbe)



Series b. Nr. ID.1. Hemisphere.  
Nr. 1C. Color (Farbe)

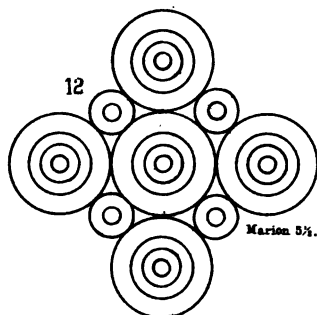
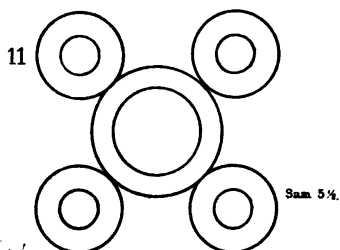
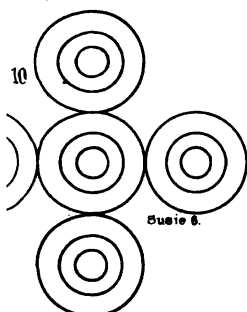
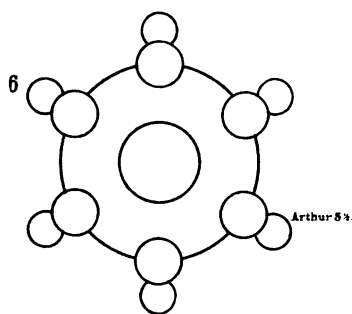
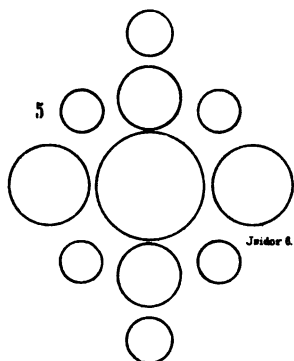
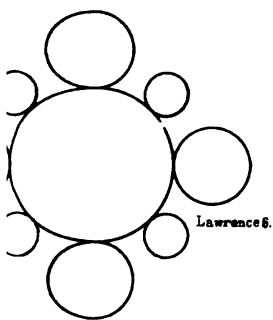


Alice 6.

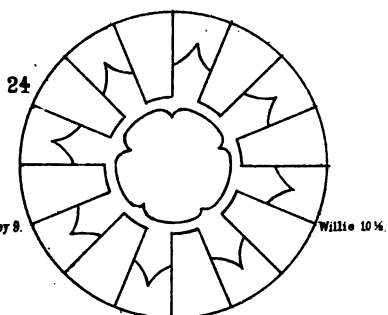
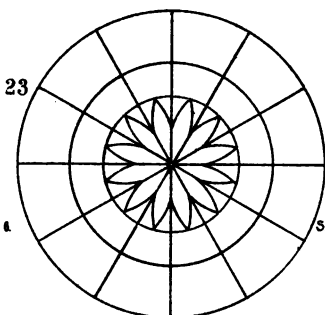
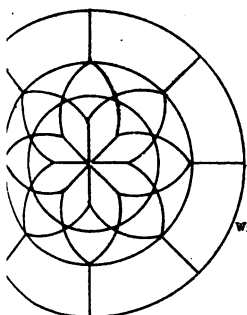
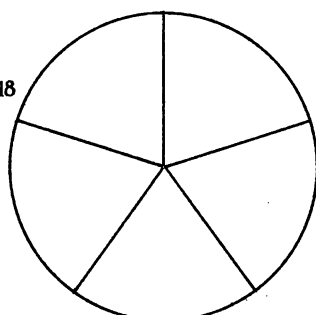
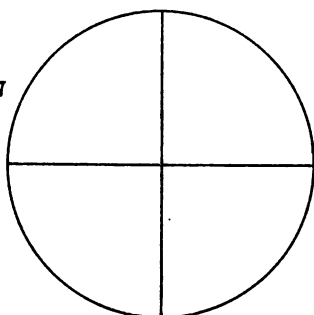
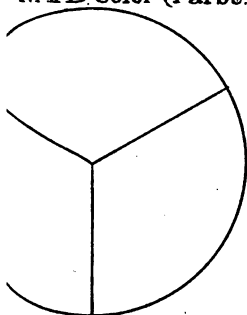
Jrwing 5%.

WU

Minnie 5%.



cNr ID1 Hemisphere  
Nr ID Color (Farbe.)

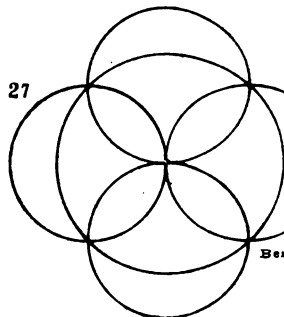
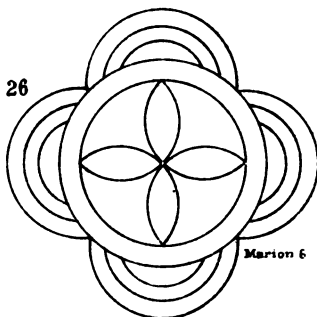
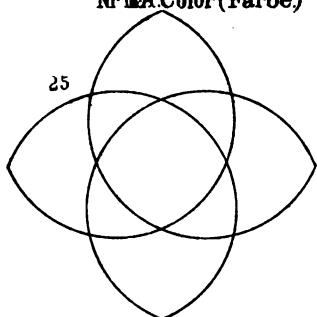




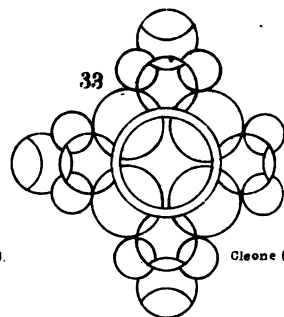
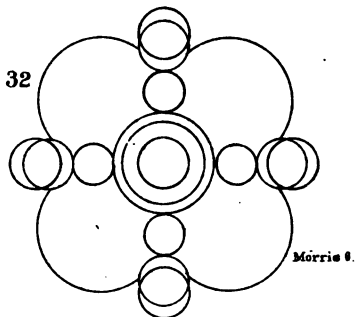
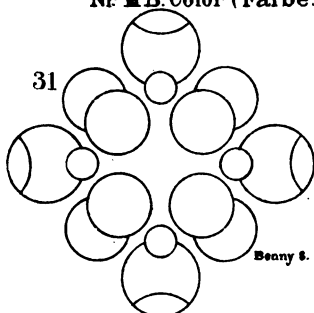




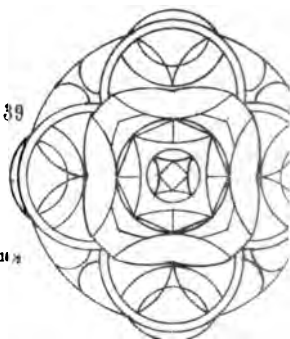
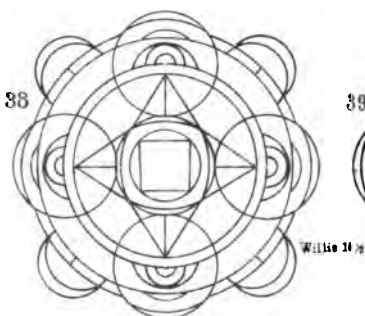
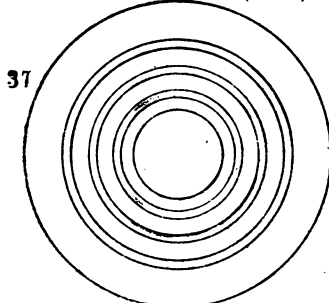
**Series d. Nr ID.4 Segment.**  
**Nr I A. Color (Farbe.)**



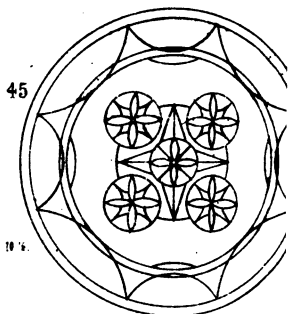
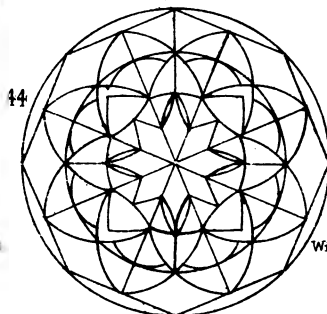
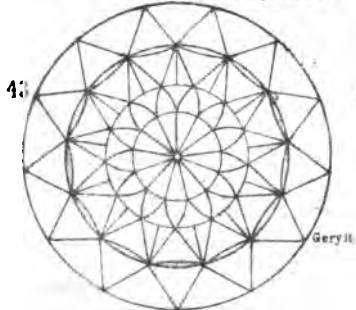
**Series e. Nr ID.5 Peripherie-division.**  
**Nr II B. Color (Farbe.)**

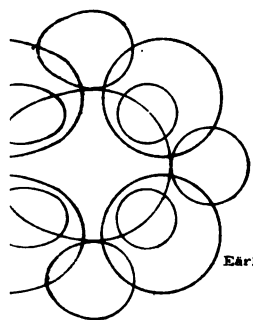


**Series f. Nr ID.6 Rings.**  
**Nr III C. Color (Farbe.)**

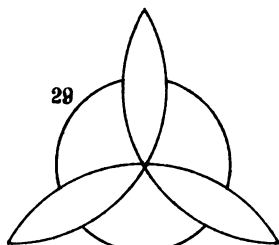


**Series g. Free use of different Lines**  
**Nr IV D. Color (Farbe.)**



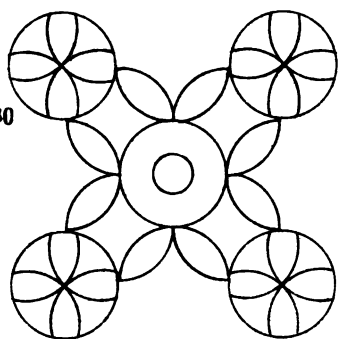


Earl 5%



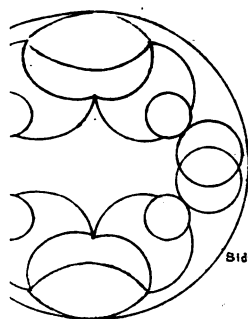
29

Georgie 6

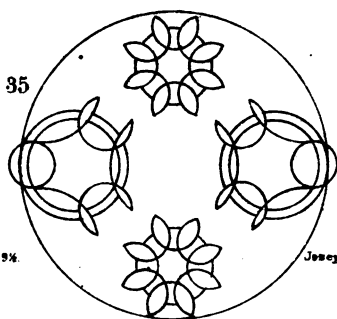


30

Charl

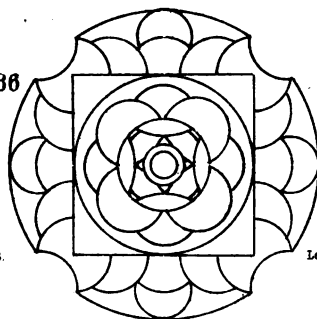


Sidney 5%



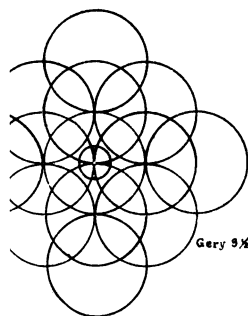
35

Joseph 8

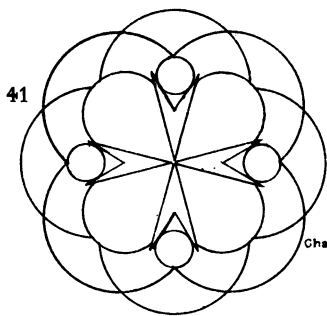


36

Leo 10%

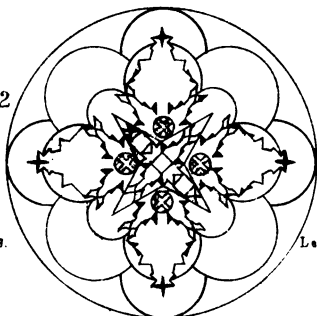


Gery 9%



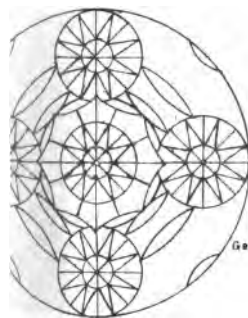
41

Charley 8

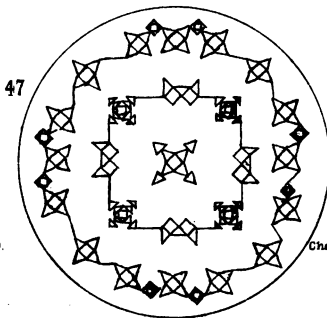


42

Leo 10%

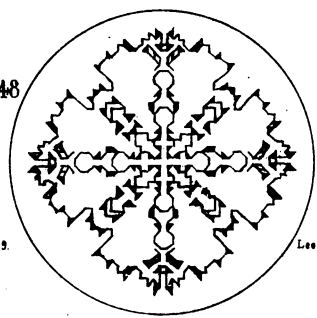


Gery 10



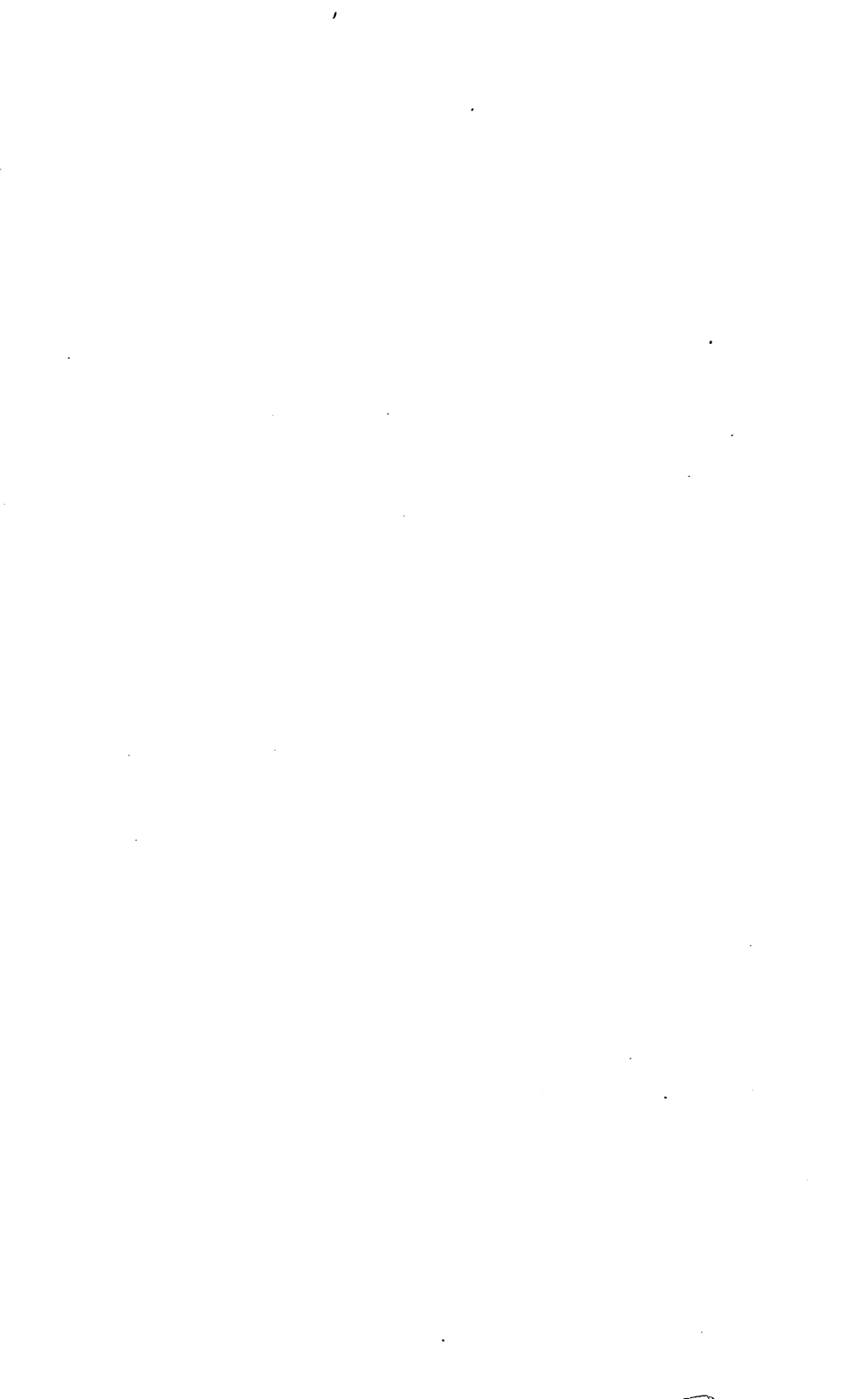
47

Charley 9



48

Leo 10%





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